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SECTION OF HOSPITAL ADMINISTRATION.

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THE FUNCTION OF A MUNICIPAL HOSPITAL.

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THE primary function of a municipal hospital is, without question, to provide the best care for the sick poor of the city. Such a definition, however, makes no distinction between the function of a general hospital supported by the municipality, and that of similar institutions, also established to care for the sick poor, which derive their support from private subscription or endowment. The difference between the duties of these two types of institutions is, indeed, not so much of a qualitative as of a quantitative nature. Both aim to give the same character of service to the public, but the privately supported hospital may limit its attention to whatever types or number of patients it can care for easily, refusing admission to others, if it sees fit, after the usual number of beds are full, while the municipal hospital must be prepared at all times to admit any and every citizen genuinely in need of medical aid. The problem of the administration of a municipal hospital is thus more complex than that of a private hospital, for the municipal hospital must have a degree of flexibility which enables it to respond to those sudden emergencies which come every winter when patient after patient, refused by private hospitals, turns to the municipal institution in which he feels he has a vested right. In the fulfillment of their function, so far as this consists in admitting not only the sick poor, but all of the sick poor, our municipal hospitals have always taken a very just pride.

When one considers the character of the treatment received by patients in municipal hospitals, however, there is less cause for satisfaction. During the last few decades, hospital construction, hospital administration, and the medical care of patients in hospitals have made enormous advances and the time has now come when a considerable proportion of the sick, even among the most prosperous classes, prefer hospitalization to home care, when they have serious or complicated diseases. In the march of progress, the pace has been set largely by a group of privately supported hospitals, chiefly those closely affiliated with teaching institutions. They have been the pioneers, exploring new fields, devising new methods, trying new experiments, and, finally, setting new standards for the care of the sick. Meanwhile, the municipal institutions, with very few outstanding exceptions, have lagged far behind, and at the present time many American city hospitals are providing medical care which is greatly inferior to

that given by the better private hospitals. Overcrowded, understaffed, often lacking proper facilities for the diagnosis and treatment of disease, they are admitting all the patients that come to them, and they are doing the best they can under the existing circumstances, but they are frequently failing to perform their function properly because they are not giving the high type of medical care which the citizens expect and which they have a right to demand.

There is no inherent reason why the professional standards of a public institution should be in any sense inferior to those of a private institution, and the administrators of municipal hospitals must, therefore, face the problem of determining what measures can be adopted to bring the medical care of their patients up to the level of the best standards of the day.

One of the chief advantages which privately endowed hospitals have enjoyed in the past is that they have received better financial support than municipal hospitals. This is, of course, of fundamental importance, and lack of money has probably been the predominating factor in determining the character of the public hospitals. The cost of modern medical diagnosis and treatment is great and unless money is provided freely to meet the demands of expansion and to provide for new developments, it will be impossible for the large municipal institutions to keep pace with medical progress. Fortunately, there are signs that the future holds a brighter prospect. Farsighted public officials are beginning to appreciate that the duty of the city towards its citizens consists, not in providing them with poor, or even mediocre medical care, but in giving them the best treatment that is available. The attitude, which regards the city hospital as inevitably inferior to the private hospital, is gradually being supplanted by the attitude that the municipal institution should be second to none in the service which it gives to the sick. It should be easy to develop this feeling by judicious publicity and educational propaganda, and financial support could then be readily obtained. Back of the city hospital stands the municipality, which represents an enormous potential source of revenue as soon as the tax-payers realize that a high-grade hospital is a direct asset to every individual in the community. With the present supertaxes on large incomes, on the other hand, private hospitals are liable to be much hampered in the extension of their endowments; and in the coming years, it may well be that conditions will be reversed and that the municipal institutions will be the ones which receive the more adequate support.

Money alone, even in sufficient amount, will not solve the problem of how the municipal hospital is to fulfill its function of providing the best medical care for any and all of the citizens. Money is the essential tool, the responsibility for which rests with the city officials, but, once the budget has been allowed for, the further responsibility lies with the trustees, and their first problem is to obtain the best possible medical staff. It is to the credit of many of our municipal hospitals that political influence has played little part in the creation of staff appointments, and politicians have realized that professional attainment is something about which they cannot be competent to judge, but even so, municipal hospitals have frequently failed to attract the best physicians. The chief reason for this is that the municipal hospitals have not offered satisfactory opportunities for work, and the only possible way to correct this failure is to improve the working facilities. The great municipal hospitals have a wealth of clinical material which appeals to the imagination of any physician, but unless one can study his cases carefully, and give to each patient the best that is in him, he will prefer to be attached to a smaller institution, in which he can make full use of his professional training. If municipal hospitals hope to attract the best doctors in the future, they must be prepared for many new developments and changes of policy, and it may be well to indicate a few of the factors which influence medical men in their choice of clinical appointments.

In the first place, most municipal hospitals need a larger staff so that the burden on any one man is lighter. This is particularly true of the intern or resident staff. The number of patients per intern is often so enormous that it is absurd to think that the doctors can give the individual attention that their patients should receive. More interns; more experienced members of the resident staff; better clinical laboratory facilities; and better housing; these will attract a higher type of intern to the hospital and the immediate result will be to make the positions on the visiting staff appeal to a larger number of older physicians. In connection with this aspect of the situation, there is another problem which has been met by the better private hospitals, but thus far has been largely disregarded by municipal hospitals, namely, the provision of more experienced men on the professional staff who can devote a considerable part of their time to the work of the hospital. It is no longer possible to administer a large medical or surgical service, or an x-ray department in one or two hours a day, or, as is often the case, in a few hours a week during only a part of the year. To organize and carry on such complicated mechanisms as these services have become, requires a continuous control throughout the year and a considerable proportion of a man's time. All this means that the man must be compensated, and municipal hospitals must accept the fact that they will be required to pay adequate salaries to certain men in key positions on the medical and surgi-

cal staff, and in the x-ray department, just as they are now paying salaries in the pathological department. The beneficial effect exerted on the whole tone of the hospital, of having even a limited number of men on the visiting staff devote the major part of their time to the affairs of the hospital, has been amply demonstrated by many a private hospital, and until municipal institutions profit from this experience they cannot expect that the professional care of their patients will be as good as it is where more attention is paid to the subject by older members of the staff.

There are few influences that exert as elevating an effect on the standard of professional work in a hospital as the presence in it of medical teaching. This is so true that the phrase "teaching hospital" is almost synonymous with a good hospital. In many institutions it has been a slow and up-hill task to convince the Board of Trustees and the public of this fact, but it is now generally recognized, and it is even appreciated that the closer the relation between student and patient, the better, in the vast majority of instances, for the patient. Nothing prevents careless or superficial work on the part of attending physicians and interns so much as the knowledge that every diagnosis made and every treatment ordered will be scrutinized by enquiring and critical students. Nothing promotes careful investigation and thoughtful study of a case as much as the detailed discussion of it by teacher and pupil. Where municipal hospitals have had the opportunity, they have usually opened their doors to medical instruction, at least in as far as members of the staff have happened to be at the same time on the faculties of the schools. Teaching in the wards has been permitted in a liberal manner, though, in general, it has hardly been encouraged or sought for. Recently, however, the trustees of a few municipal hospitals have shown a clearer understanding of the contribution of teaching to the hospitals and have attempted to secure a closer affiliation with medical schools which might work to the benefit of both. Thus, to cite a single instance, the Boston City Hospital has arranged by more or less formal agreement, to appoint as chief of certain services in Medicine, Surgery, and Pediatrics, men who are nominated by, or are acceptable to, the Harvard Medical School and the Tufts Medical School. When this has worked hardship on the members of the hospital staff, by interfering with their natural advance by seniority, the personal sacrifice has been made with a generous spirit in the interest of the institution. To be effective, the system should provide for complete power of appointment by the chief of all subordinates on the service and through this means young men of promise can be introduced into the hospital and given opportunity for development and service that could not be open to them through the prevailing system of advance by seniority. One step more, however, is needed—a step involving a still further appreciation of the fact that clinical instruction of students is not only a duty of the hospital, but an asset to the hospital. Not only should the wards be open to students, but much more should be done for the students in the direct way of making it possible for them to do the best work of which they are capable. Laboratories, laboratory facilities and class rooms are necessary to this end. It may be questioned whether it is justifiable for a city institution to spend its money in making such provisions, but the answer is clear if one realizes how much the students actually contribute to a hospital service when they are given adequate opportunity for doing thorough work. Circumstances are such, moreover, that it is particularly in the municipal hospitals that the students can be of most assistance, for it is here that the number of patients is largest and the number of interns is smallest. On my own medical service at the Boston City Hospital during the last winter, there have often been ninety or more patients under the care of three interns and an extern giving about half his time to the wards. This is in contrast to a nearby private institution in which a service of about seventy beds is carried on by six interns. It would have been impossible to make careful records of the patients and to study them in the way which modern medicine requires, if students had not been continuously on the wards, and if there had not been a completely equipped laboratory in which they could work. It has been found that when students act under constant and proper supervision their work is reliable and the extent to which they can relieve the house-officers amounts to a very significant contribution to the hospital. The real problem of the municipal hospital is not whether it is justified in spending its funds on providing facilities for students, but whether it is doing all in its power to attract the best students to it, so that the care of the patients may be still further promoted.

While it has thus become generally recognized that medical teaching is, to say the least, a legitimate function of the municipal hospital, the field of medical research occupies a much less clearly defined position. Is medical research properly to be undertaken in a city hospital at the cost of the city? There are those who believe that research is not a true function of any hospital, but that it should be carried on by the universities or paid for by special funds. If the expense of research—and the expense is great—is to be borne by the hospital budget, it is fair to ask what benefit the hospital itself will derive from fostering it, quite apart from the contribution it may be making to the general cause of medical progress. The answer to

this question is to be found by turning once more to the experience of the privately endowed hospitals. Almost every hospital which is widely recognized for sound, scientific professional work will be found to be an institution which has encouraged research. These are the hospitals which attract the largest number of highly trained physicians, and the men are drawn to them, not only because of a desire to take part personally in the study of research problems, but because they want to be in the stimulating atmosphere of progress which is imparted to an institution by the presence in it of scientific investigators. Indeed, the most important direct benefit that a hospital obtains from the encouragement of research consists, not so much in the actual discoveries that are made, as in the influence of scientific investigation in attracting the best men in the city, or in the nation to its staff, and in raising the whole professional tone of the institution. This is what not only justifies a hospital in spending money for medical research, but what makes it absolutely necessary for a hospital to make ample provision for research if it aspires to provide the best medical care for its patients. It is not merely a question of permitting universities to carry on research within the hospital walls, but of actually providing laboratories, equipment, technicians, and salaries for professional workers—it is, in fact, a question of realizing that the fostering of medical research is one of the most important means of enabling a hospital to perform its full function of giving the best medical care to the sick.

The possibilities for medical research are in many ways better in the large city hospitals than in private hospitals, because of their size and the availability of a greater variety and number of clinical cases, but up to the present time it is not unfair to say that the private hospitals of this country have shown a greater appreciation of the importance of research than the municipal hospitals. This is probably, in part, because the trustees of public institutions have had difficulty in obtaining more financial support than was needed for the actual treatment of patients and, in part, because they have failed to see that money invested in research indirectly promotes the better care of patients, and is thus an entirely justifiable expenditure of public funds. The continued limitation of research in our public hospitals, however, for any reason whatever, means that they will remain inferior to our best private hospitals. It is of great significance, therefore, that a most important step, and one which it is to be hoped may serve as an example to many other municipal hospitals, has recently been taken by the Board of Trustees of the Boston City Hospital. So profoundly have these gentlemen appreciated the beneficial effect of research on the professional standards of a hospital that they have established a complete division of medical research, consisting of a special ward, to which patients may be brought for study from any part of the Hospital, and extensive laboratories in immediate connection with the ward—the whole housed in a specially constructed building, the Thorndike Memorial Laboratory. Not only has the City thus provided facilities for research, which are unsurpassed in America, but it is allowing an ample budget for technical assistants and for the salaries of scientific workers. So spacious are the laboratories, moreover, that in addition to providing for the full-time staff, they also offer opportunities for members of the clinical staff of the Hospital who desire to devote part of their time to investigation and for advanced students who may wish to come from other parts of the country, for further training and experience. The experiment which the Boston City Hospital has inaugurated will doubtless be watched with interest by many other municipal institutions, but if wise use is made of the new laboratory it is scarcely conceivable that it will not be a considerable factor in helping the Hospital to perform its function towards the citizens of Boston.

No hospital can properly serve the sick unless it has sufficient well-trained nurses. Here, again, our municipal hospitals, with few exceptions, are inferior to the best of our private hospitals. Too few nurses; nurses overworked; patients consequently receiving inadequate care—this is too often the story. The problem is one that must be faced squarely, although, with the present general shortage of nurses, it is difficult to see the solution. One absolute essential, and the simplest, for it depends merely on money, is the provision of adequate pleasant living quarters. Beyond this, the maintenance of a high educational standard in the Nurses' Training School is perhaps the most important factor, for it has been clearly shown that those institutions which give the best training to their nurses are the ones which are most sought after by young women who are entering the nursing profession.

Finally, mention should be made of that recent development in hospital administration, the Department of Social Service—the link between the hospital and the home. In a municipal institution, even more than in a private institution, there is need for trained social workers, for the proportion of patients who are poor and who cannot receive proper after-care in their homes is greater. To the patient the Social Service Department ensures wise and continued treatment, and to the physician it gives the opportunity of following up cases which would otherwise be lost sight of, and thus helps him to learn more about the end-results of disease and its treatment. The duty of the city to-

wards the health of its citizens certainly extends beyond the walls of the hospital, and if a municipal hospital is to fulfill its function it must support a well-staffed Social Service Department.

Such, then, are some of the problems which confront our municipal hospitals. Are we going to continue to sit back and quietly accept the fact that the limited number of poor who are treated in privately endowed hospitals receive the best medical care, while the great majority of the poor who are admitted to public institutions receive inferior care? Or has the time come when public officials and the public itself will demand that citizens who are taken care of by a municipal hospital can be assured that they are receiving the best modern treatment? There is no valid reason why our municipal hospitals should not be fully equal to any private institution in the professional services given to the sick, and there are many reasons why it is their duty to be as good as any private institution. Much money is needed, but the city government is closer to a larger and more constant source of income than are private hospitals, and there is no cause which makes a greater appeal to public officials or for which the citizens would prefer to see their money spent than for the maintenance of a public hospital in which they have implicit faith, and for the services of which they have an inherent right. The test of the efficiency of hospital administration is to be found, not in the statement of per-capita costs, but in the character of medical treatment. Once the money has been given by the city government it is for the trustees and administrators to provide sufficient buildings to take care of the patients without overcrowding, to secure the best possible staff of physicians, nurses, and social service workers, and finally, to stimulate the staff and raise the professional tone of the institution by giving adequate facilities for teaching and research. When this has been accomplished our municipal hospitals can truly fulfill their function of offering the best medical care to all who are in need of it.

MUNICIPAL HOSPITALS FROM A TRUSTEE'S VIEWPOINT.

BY HENRY S. ROWEN, M.D., BOSTON.

THE basic idea in the establishment of a municipal hospital is the care of its sick and needy citizens and all strangers temporarily within the city's gates. In the past these hospitals have been looked upon as a sort of refuge, where the needy ill were sent to, where they were well housed, reasonably well fed and given good routine medical and surgical care. Patients with means have naturally avoided them because they felt they lacked the equipment necessary for proper diagnosis. Such institutions, in the minds of the community and the profession, have occupied a lower plane than the equally large so-called semi-private and endowed hospitals. This is no reflection upon the men, and women, too, who in the past have given to them so freely of their time and energy. Words cannot magnify the service rendered by many of them to the poor and needy. From every point of view, the municipal hospital should be the best in every large community. In recent years there has been an effort made to raise their standards and these endeavors are proving successful. The civic spirit, which inaugurated and carried on the work for so many years, is now more active than formerly. The evolution and maintenance of this spirit is best executed by the relations which exist between the government authorities and the institution's coördinate branches, the trustees, the staff and the executives.

To the Boston City Hospital, the municipal government, at all times liberal, has been most generous in recent years. Its appropriation for maintenance in 1923 totals over $1,250,000. This is the equivalent of an endowment of more than $25,000,000. Indeed, we are better off than having a fixed revenue, for the government is, and always has been, ready to meet any unexpected situation arising during the current year, calling for an extra financial outlay. As a result of this happy financial situation the Board of Trustees' labors are lightened, leaving them, in a sense, free to concentrate their efforts upon the care of the sick and the government and management of the hospital. Upon them devolves the policy of the institution,—its influence, its scope and its extent. The citizens, through their city government, having set an example of financial liberality, deserving of all commendation, should, in return, receive the best possible hospital care and the best possible medical and surgical skill. To bring about these results, trustees should have at their disposal sufficient beds to meet the demands of the growing needs of the city,—if possible, an excess, to cope with any reasonably urgent emergency. In the erection of their new buildings, utility and beauty without extravagance should be their aim. To provide for the best scientific care of the sick, calls for the combined efforts of many minds;—on the part of the trustees, by a readiness at all times to confer with the staff and a liberal but judicious meeting of their wants in their endeavor to keep abreast or in advance of the times by the insistence that all appointments have their initiative from the staff, subject only to their confirmation. For obvious reasons this is the only safe policy, save, perhaps, for the following deviation. Teaching services in a hospital are of an inestimable value. We believe that opportunity

should be given to reputable schools to nominate the heads of such services after consultation with the staff and trustees. As many of the staff as possible should have school affiliations. Teaching keeps them well versed in the work at hand and this, in turn, reverts to the welfare of the patient. There is an increasingly growing feeling that men who devote their lives to clinical teaching, spending a goodly portion of their working day in the hospital service, should receive adequate financial compensation. A beginning has been made in some municipal hospitals and has met with the approval of the government. The executive staff should be appointed by and subject to the trustees only.

Many of the beds in our wards today are occupied by those who are seriously ill, having entered with their complaints well advanced. It has been felt for some time that if these cases were studied in their incipiency, some of them would be spared serious after results. With this in view, trustees should pay more attention to their out-patient department and bend every effort to place this division in a position to meet the demands for careful and intensive study of early pathological conditions. In the Boston City Hospital we have erected a building so designed as to meet the wants of medicine in all its branches, the whole to be under the direction of one who will be authorized to correlate its various activities with a minimum of friction that the best results may be obtained. The conviction is growing that the out-patient department of large hospitals has not received the attention that it has deserved. Older members of the staff may yet see the out-patient as a more fruitful field for study than the occupant of a ward bed.

The hospital of today demands liberality in the number of its laboratories. To name some of them is sufficient to show their necessity;—to investigate the blood diseases, to provide for the nephritic and diabetic, the needs of the immunologist, for the investigation of the pediatrician, the small ward laboratory for quick routine work for the surgeon as well as for the internist,—all so regulated that there will be little, if any, duplication of work. This, of course, calls for paid trained men and their assistants and technicians, sufficient in number to meet all demands. When possible, these scientific adjuncts, in addition to their routine and research work, to be correlatives of a central laboratory where diseased conditions can be studied intensively, both clinically and otherwise, an arrangement now to be put in operation in Boston in the establishment of the Thorndike Memorial laboratory, for medical research. The pathological laboratory should be sufficiently equipped to allow for, not only routine work, but its facilities should afford opportunity for wide research study. Every effort should be made to increase the number of autopsies and arrangements should be at hand to enable the house staff to obtain permissions at the earliest possible time.

The x-ray department, while not exactly in its infancy, now occupies a very important place in the curriculum. Liberal provisions should be made for this, particularly along the lines of x-ray therapy.

That the staff may obtain as full a return as possible for their gratuitous services, a suitable private pavilion, connected with the hospital, should be erected for their use; that they may concentrate their work and have their patients still more or less under the supervision of the hospital. Following the suggestion of those in charge of the standardization of hospitals, uniform records should be kept and an essential number of trained workers used for this purpose,—the universal code for fracture records being a recent important innovation.

A library, preferably fire-proofed, should be provided, not only for the preservation of valuable records and books, but, also, as an encouragement to the staff and house officers to study and report their cases.

Refinement in meals is of no small consequence in the care of the sick, and as the diet in the treatment of severe infections has grown to be of such great importance in recent years, the well equipped special diet kitchen under the direction of trained technicians, is a necessity, not only for the benefit of the ill, but for the education of the nurse.

The department of pediatrics is now on such a firm basis that it demands a separate service in the hospital. It should have supervision of all children, both out-patient and ward cases. It should, of course, take immediate charge of all sick children, having the care of the infant feeding and looking after the surgically ill, from a medical standpoint. In the past the child entering a general hospital for any complaint, not infrequently, contracted other diseases,—acquired immunity as it were, but of a very expensive kind. This problem has led to the institution of the isolation ward, where children, especially, are admitted and kept under observation until it is known they are not carriers of disease. This unique addition is proving of immense value, not only to the patient, but to the parents, who so frequently in the past were cut off from visiting their little ones, owing to an outbreak of contagion in the general wards. Herding patients in the municipal hospitals is no longer permissible and provision must be made for the delirious, the very sick or the dying, in appropriate sections. The care of the acute alcoholic is a pressing problem but can probably be solved by a segregated ward, manned by male help, largely. A policeman present, also, makes for efficiency.

Social service work is a growing division, especially in the investigation of home conditions,—of special value to both surgeon and medical man, to say nothing of the peace of mind to the patients themselves. Follow-up work in the out-patient department, particularly, is most essential,—expensive, of course, but most important.

In our cosmopolitan cities, especially on the seaboard, diseases incident to the Orient and the Tropics frequently demand hospitalization. In Boston, a municipal hospital service has been created for these cases. We have been rather surprised at the extent of this clinic. Here, too, for many years we have looked after the exanthemata. Having these cases under one management has worked admirably from an administrative point of view. Consultations are readily obtained and the use of the laboratory has been much appreciated. We believe the municipal hospital should be prepared to meet and care for any sporadic case of smallpox occurring within or without the hospital. In such a population as exists in our civic hospitals, childbirth is bound to occur from time to time. A separate department, large or small, should be established for them. As many of the difficulties which arise in obstetrics in a large community are emergencies, proper equipment and rooms should be set aside for the eclamptic and infected cases.

I shall touch very briefly on many other activities, such as the central dining room, the modern laundry, the attractive nurses' home with a maximum of recreation facilities and the opportunity for outdoor exercise to those who are in training in the hospital, both the house officer and nurse.

Of all the factors tending to advance the standing of the hospital, medical teaching stands out preëminently. The municipal hospital, today, offers a better field than the endowed, as the latter, year by year, is gradually becoming more private in its clientele. In consequence, the leading medical schools are naturally turning to it for such opportunity. This of necessity calls for a generous outlay on the hospital's part that it may do its best work. This close cooperation between the medical school and the hospital is an incentive for better visiting men, better types of house officers and nurses, and a better end-result for the patient.

A word concerning the government and management of the hospital. To provide for the housing, the feeding and the routine care of a large number of people, acutely sick, is a huge task. To obtain for them the best modern scientific skill is a proposition requiring the very best thoughts of divers minds. That this attainment may be reached calls for the highest executive skill. Fortunate indeed is the board of trustees which has for its executive such an officer. He is the wheel horse of the entire outfit and must possess as attributes, patience, tact, firmness and medical vision.

May I be permitted a word of apology for the occasional personal note running through these pages concerning the activities of the Boston City Hospital? They were used for purposes of illustration only.

Such rather briefly is a trustee's viewpoint of the municipal hospital today. We feel that the wealth of the citizens bestowed upon us is not to be used for mere material for vainglory, but for the opportunity for achievement, for the better education of our young medical men and for men who wish to keep young medically. We aim to be an example to other hospitals, rather than they to us.

SOME NEWER DEVELOPMENTS IN HOSPITALS.

BY MR. CHARLES A. COOLIDGE, BOSTON.

THE fundamental cause for change in the development of the modern hospital from the old-fashioned type is the demand of the Medical and Surgical Staff for better facilities for proper diagnosis and treatment of the patient as well as proper facilities for working out research problems which ultimately redound to the welfare of the human race. The modern hospital should be the center with the material at hand for teaching the younger men after they have received their primary instructions in the schools. Otherwise, it is not doing its part to the community and the medical profession. Carrying this idea still further, there has been developed a new type of hospital called a teaching hospital, with the accent on the teaching and research side. This does not mean that the best of medical care and nursing is not given to the patients, but that the study of the individual patient and the effect of disease on his different organs which may be sympathetically affected, is carried out in a more elaborate and highly technical way. This type of hospital has large spaces devoted to laboratories in close relation to the wards and has considerably increased the size and expense of the building over the ordinary type—so that it cannot be compared in price per bed with the older type of hospital. Going still further there is the hospital for pure research, where there is no teaching, such as that of the Rockefeller Institute in New York. This is a hospital with a small number of beds comparatively. It has been used by filling it with patients who all have the same disease and concentrating on the study of that disease as long as desired, the patients being particularly selected.

In a general hospital apart from the small laboratories in the ward for examination of urine, faeces, etc., and the small pathological

laboratories in connection with the operating rooms to determine during an operation whether a growth is malignant or not, the ideal hospital should have in close connection and of easy access, clinical, bacteriological, serological, pathological and allied laboratories, so that by the close and interlocking team work the proper diagnosis of the patient and the proper treatment, care and diet can be quickly and efficiently decided upon. This is what the laboratories on this type of hospital are primarily for and their importance cannot be overemphasized.

I have spoken so far only of the medical side of a hospital, but there is a very important branch which has received a great deal of study; namely, the administrative and business side. I am not going to say much about this in detail, except that this business side has been and is being constantly improved. One of the best modern features is to have the offices of the heads of all the different departments in close touch with the Superintendent. The most modern type of hospital is planned with extensive store rooms so that the supplies can be bought in bulk and at the time of the year when the prices are low. In one hospital instead of diet kitchens for each ward and on the same floor, there is a main serving room in the basement near the kitchen, in which the food is placed upon the trays and these are sent in a closed electric dumb waiter to the wards above. The patient has a menu with a choice of dishes which are checked according to what the individual desires and the card comes up with the tray. The Superintendent claims that they have saved 25 to 30 per cent. by this method over the old system. This means, of course, that the kitchen and serving room must be placed so that the dumb waiter can serve near to the different wards, and no long runs, as otherwise the food would cool.

I have not space or time to go into a minute description of all the different details of equipment of the modern general hospital, but in a general way it should include the following: Ample offices for the administration, etc., reception room and smaller room. The general appearance should not be institutional but more like a home or hotel. In fact, this idea should be carried out as far as possible where the general public go. There should be a library with adjacent stalls in proportion to the amount of volumes that the hospital may reasonably need. There are certain departments that should be centrally located as they are used by the outpatient department, the patients in the wards, and the private patients, and it is not practicable to duplicate these plants, such as the x-ray department, hydrotherapy, photography, electrocardiography. This latter service has recently been greatly improved by the invention of a new system of insulating the wire, which allows a direct connection with the patient in the ward. By plugging in a wall receptacle, at the bedside, the physician having on a head telephone can talk directly with the operator who is running the apparatus. The kitchen and dining rooms and store rooms should be arranged with the idea of efficiency and saving every step possible. The ideal arrangement would be to have a serving room in the middle with four dining rooms leading out of it, one on each side; if the kitchen is below, the dumb waiters serving directly into the serving room. In some of the new hospitals the cafeteria system is being used for breakfast and lunch for the nurses. There is always the mooted question of whether the orderlies and servants should all be housed and fed in the hospital itself. The Superintendent generally desires it as he has more control of the individual and there is less danger of contagion, but with the high cost of building it is expensive, especially as it seems a luxury to house servants in a fire proof building when we ourselves live in combustible ones, and they can hire rooms outside generally at a less cost. The most recent decision seems to be a compromise providing quarters for a portion, selecting those whom it would be advantageous to be able to call upon at all times in case of emergency.

NURSES' HOME.

A Nurses' Home, in proportion to the requirements of the hospital, is a necessity. It should have a large general room, a demonstration room, and a room where the nurses can have a good time, with a kitchenette, also a small laundry for their own use. There should be bath tubs and showers, and their own rooms as ample as is consistent with economy, with a general room on each floor. In each bed room there should be a desk on the wall as well as the usual necessary furniture, and the color of the wall should be attractive and cheerful. There should also be a certain number of rooms isolated for an infirmary as well as arrangements for the night nurses to sleep in quiet during the day. The general custom is to have the nurses eat in a dining room near the main kitchen in the hospital so as not to have to maintain a separate kitchen, but in a large nurses' home it might be as well to have the dining room in the home itself. Surroundings should be as homelike as possible, as it is their home for three years.

There should be, if possible, a Private Pavilion. In Boston, before the Phillips House was built, it was a disadvantage for a sick person to have much money. The only private hospitals one could go to, with the exception of Corey Hill, were altered-over houses or small poorly-equipped institutions, whereas the poorer patient received the benefit of the fully-

equipped hospitals. Of course a sick patient could go on the same basis as the poor, but if he wanted privacy and seclusion it was extremely hard to get. Phillips House, which is the private-pay pavilion of the Massachusetts General Hospital, met with immediate success and has continued on its upward course. It contains 100 single private rooms, some with and some without baths, but all connecting with w. c. and wash bowls. It has its own kitchen, dining rooms and service. The question of operating rooms was much discussed, the physicians desiring to use the general operating rooms of the main hospital. It was built, however, with its own operating suite, which consists of two large operating rooms and their accessories and rooms for surgical dressings, all of which are on the top floor and are in constant use. The elevators are in a vestibule so as to shut out noise as much as possible. There is a service elevator which opens into the service portion of the building. The building was carefully furnished to give a home-like appearance and the colors are pleasing and not hard on the eyes. It is true that a private pavilion is not of any use for research and teaching but it does attract to the hospital people with means who hereafter may be of great assistance to the hospital and, furthermore, it allows the doctors connected with the hospital to bring their patients in close connection with their work in the hospital, thus giving them more time to give to their charity patients.

PRIVATE PAVILION.

Instead of using the roof and porches on each floor, one of the latest pavilions has long windows which open to the level of the floor with small balconies in every room so that the head of the patient's bed can be pushed out of doors. This balcony does not shade the windows of the rooms on the floor below as it does not project far enough. This idea was taken from the tuberculosis hospitals.

OPERATING ROOMS.

The old time perfectly white large amphitheatre operating room is a thing of the past. The modern operating room is smaller, with movable steep stands for observers and students. There should be a series of operating rooms in proportion to the needs of the hospital. The method of using them is according to the methods employed by the chief surgeon. Some etherize in the room itself, others in separate rooms. The wash-up rooms, sterilizing and instrument rooms should be in close proximity, also a small pathological laboratory. The latest method of lighting is at the Boston Lying-in Hospital, where after a series of experiments, different colored screens are used under the over-head powerful electric lights, so that the color of the light is the same as daylight. The curious result has been that although the rooms have ample side and overhead north light, the surgeons shut out the daylight and prefer to operate with the artificial light, as it is always the same. The lighting, heating and ventilation should be independent of the rest of the hospital, and glass screens should be used to prevent the movement of dust. The most modern color for the walls is green or neutral gray, which does not dazzle the eyes. Probably the most interesting operating room is that of Dr. Carrel of the Rockefeller Institute, where he obtains the most marvelous results. The heating coils are behind brass plates which are air tight. The room is painted a very dark gray, almost black. On each wall are two large atomizers, half-way up. These are connected with a tank of disinfecting fluid under pressure. Before an operation the room is thoroughly cleaned and blown out with cleansed air, and then the air is shut off. The atomizers are started and allowed to run until any particles of dust in suspension are deposited and then nobody is allowed to go into the room until the operation starts. He uses as few assistants as possible and they are clad in black. His idea is to keep his eyes focused on the incision and what he is doing and everything is handed to him without removing his eyes, and there is nothing bright in color or light to catch his eyes. Also with everything dark the sponges and threads, etc., are more easily seen.

One of the most important things in an operating room is to be sure that the lighting system is in duplicate and even triplicate.

WARDS.

The tendency in the wards at present is away from the large unit of twenty-five and thirty beds in one room with a window between each bed. This method of course is the most economical unit as far as nurses are concerned. Some of the latest plans are arranged with cubicles of four beds, the partitions being wood below and glass above, the partitions not running to the ceiling. In the new Infants' Hospital in Boston, similar partitions are between each bed and are found sufficient to prevent contagion, there being wash basins at frequent intervals, so that the nurses and doctors do not have to go any distance to clean up, and are less likely to carry contagion. The arrangement of the wards in the new Lying-in Hospital is entirely new, the whole ward itself is composed of twelve beds, six on each side of a glass parti-

tion down the middle. The nurse's station is at the corridor end with a window looking into each side of the central partition. Wires are strung from the main walls on which cotton curtains are strung so that each bed has privacy, if so desired, and at night the whole ward is opened up. This arrangement has proved most popular in this kind of hospital—as I said before, units of 2, 3 and 4 beds, with separate rooms for examination and treatment, all of which add to the comfort and welfare of the patient.

There should be a sound-proof room which can be used when a patient is *in extremis*, and large enough to allow his family to be with him.

In all the new hospitals great care has been taken to provide for the patients' beds to be wheeled out of doors.

The Children's Hospital in Boston has a covered porch.

Office for internes and students outside, but adjacent to the ward, which they can use for their clerical work, when they are not wanted inside the ward itself.

LABORATORIES.

Apart from the small laboratories previously mentioned there should be laboratory space for a large clinical laboratory with necessary subdivisions,—Pathology, Bacteriology, Chemistry, Serology, etc., with research laboratories and animal houses if possible. The amount of these necessarily depends on the amount of money available as well as the policy of the hospital.

In some modern hospitals pathology has a building of its own, and it is well to have it at any rate in a separate wing if possible, and have associated with it in a secluded place, the morgue, autopsy room and chapel. The different laboratories should be in as close proximity to each other as possible, so as to allow easy access. Modern medical research and science requires more intimate co-relation of the different laboratories than formerly. The furnishings and fittings of the laboratories depend on the men who are going to use them. It has been my experience that what is acceptable to one man is not acceptable to another. But there is one thing that is most important,—to so design the rooms themselves that they can be changed and adapted to future wants as methods change in the future. Keep them as elastic as possible. For instance, run the electric light conduits to a box so that wires can be taken off and attached to different experimental apparatus without affecting the general system. By this I mean that the lighting system should be a unit, the power elevator a separate unit, the experimental current another, otherwise it will be impossible to maintain a steady experimental current. Some of the newest and most difficult equipments are at the Rockefeller Institute, where the largest constant temperature room has been perfected by automatic control to a variation of 1 degree. Another was automatic temperature control of the water supply in Dr. Lavine's laboratory, so that the cold water does not vary in temperature, either in summer or winter. This is useful in getting a constant evacuum.

THE DISPENSARY.

Should be arranged primarily with the idea of efficiency as well as good work. The patients should go progressively without loss of motion. Of course the most economical method of running it would be to have it function all day and not limited to a few hours. As a large majority of the patients in some hospitals are admitted through the dispensary the admitting suite should be between the dispensary and the hospital itself. Also the storage of the history cards should be easily available to the dispensary and hospital so as to avoid duplication of cards and seeing at a glance if and when they have been previously treated. The different departments which are allied, such as the eye, ear, nose, and throat, etc., should have their rooms adjacent. In Pekin, where the dispensary is very large in proportion, the corridors are widened into waiting rooms with secondary corridors leading off of them, which is conducive to privacy and prevents confusion, which is likely to happen as the majority of the Chinese do not understand English and they bring their whole family with them. There should be rooms of ample size for massage, baking, electrotherapy for bone fractures, and different bone diseases. Besides the usual medical and surgical divisions a plastic room for orthopedics with special traps to take care of the plaster, also mechanical shops to manufacture the apparatus to be used in treatment of postural defects, flat foot, etc. There should also be small laboratories for quick laboratory tests. There should be ample space for social worker.

POWER HOUSE AND LAUNDRY.

Heat, ventilation, refrigeration, electricity and plumbing.

Theoretically the best place for the power house would be the center of the plant, but it can very seldom be placed there, as there are so many other services which also should go in that location. The first thing to decide is whether the different services shall be from a central source, located in the power house, or whether it is better to have separate units in the buildings. In the Harvard Medical School group, the heating is done by hot water and this is a desirable form where there are electric genera-

tors and there is a large amount of exhaust steam, but it should be pumped and produce a forced circulation which will reduce the cost of the original installation very materially. In Nashville and Cleveland steam is being used as the electric current is bought from outside. This steam heating system is of the most modern type. The steam is carried in comparatively small supply pipes at high pressure to the different units and stepped down with reduction valves at each building. By using the evacuum system and dividing the radiators into sections one can get as much and more control and regulation than with hot water. In a plant, unless it is as large as 1500 horsepower, it hardly pays to install a conveyor and overhead storage bins for coal, but it is wise to use automatic stokers, with a convenient coal bunker which should have a capacity for at least 10 days' supply. In Nashville each building has its own hot water heated by steam in the building as the insulation of long runs of pipe is expensive.

COAL AND REFRIGERATOR.

The question of the use of fuel oil and burners relative to coal has been exhaustively studied. The Harvard Medical School plant uses oil very successfully. There is no expense for removing cinders and it requires less men for stoking. The result of my investigations for Cleveland and Nashville were that with coal as near as it is to those places it is more economical to use coal. Where the plant is on the seaboard as is Boston and far from cheap coal fields it is more economical and safer to use oil. Where a large amount of refrigeration is required it is better to have the ammonia in the power house and pump the brine to different buildings.

VENTILATION.

This is governed by the regulations of the state and city where the building is to be built. The most modern method used, both at Nashville and Cleveland, is to do away with the double fan system of supply and exhaust except in exceptional places such as lavatories, lecture halls, and places where a considerable number of people congregate and use simple exhaust fans which pull the air out, relying on the windows for the supply of fresh air. The reason of this is that when a window is opened on the double system it does not function, and generally it has been found too expensive to run so many fans.

PLUMBING AND FIXTURES.

Should all be exposed and away from the wall if possible so as to be able to clean behind. The chemistry and laboratory fixtures should have a separate soil pipe of their own.

DISCUSSION.

DR. EMERSON: In reference to the power-house, I would like to ask, for a general institutional purpose, we will say of a hospital of 350 or more beds, what type of boiler you would recommend, whether the high pressure water tube boiler or the return pressure boiler? I would like a little information along that line, and also a little information as to the refrigerating system—whether you recommend at the present time any particular system of refrigeration over any other.

MR. CHARLES A. COOLIDGE: Of course, in your problem in regard to the boiler, a great deal depends on it. In these new buildings we are using high pressure boilers of the Babcock & Wilcox & Heine type and we send high pressure dry steam through smaller mains, which are insulated, using reduction valves at each building. We feel we are getting more efficiency in this manner, and less cost of installation where the runs are long, as the main can be smaller. These teaching hospitals run from 1200 to 1500 horsepower, and we always select the units which are best adapted to the load, and have a unit in reserve in case of a breakdown.

In regard to the refrigeration plant there are three methods:

1. Putting the machine in the power house and circulating cooled brine through the different buildings and pumping it back to the power house. This is expensive where the power house is a long distance away.

2. Installing a refrigerating machine in the building which uses the largest amount of refrigeration and circulating from there. The objection to this method is the risk of ammonia escaping.

3. Installing small individual machines locally where needed. The objection to this method is the original cost of installation and the noise. If the building is of steel construction the vibration and noise will be communicated to the steel, which will carry it through the whole structure. There is also the risk of a leak in the ammonia piping, which would be very bad in the wards and laboratory building especially.

DR. S. V. MERRITT, Fall River: Several weeks ago I was at the Mayo Clinic and I was surprised by the fact that practically all their x-ray work was being done by portable machines. If they wanted a picture at the bedside, the machine was wheeled in and then it was taken to some other operating room. The patient didn't have to be put on a truck and taken to some central x-ray room. I would like to ask Mr. Coolidge whether that seems to be the tendency in hospitals at the present time—whether they prefer to take the x-rays at the bedside or not. For instance, in taking an x-ray for kidney work they had a dark ray kidney screen dropped down, and the x-ray machine and fluoroscope

was wheeled in and then taken to some other room.

Another question—whether with this overhead lighting with a 1,000 watt light—whether that wouldn't overheat your operating room, whether you wouldn't get intense heat?

MR. CHARLES A. COOLIDGE: In regard to the x-ray, that is true, there is a tendency today to do this in some places, but so far we have established a regular plant located in a position which is convenient for hospital wards, the dispensary, and the private pay pavilion if there is one. I should think there would be more or less trouble in using the movable plant constantly on account of the effect of the x-ray. In some of the latest laboratories the x-ray department has been insulated, with lead in all the partitions, floors and ceilings, in addition to the screens which are already on the apparatus.

In regard to your question about overheating the operating room by the 1200 watt lights, I do not think there is any possibility of this happening and certainly it has not occurred up to date. The lamps are placed in holes in the ceiling which can be readily ventilated, and covered up on the bottom side with screens of different colored glass which filters the red and yellow light out so that it is practically the same color as daylight. In these screens there is at least one-half inch of glass between the lamp and the surface of the ceiling, so that it is practically impossible for any appreciable amount of heat to get into the operating room. Besides this the operating rooms should be on an entirely independent heating and ventilating basis from the rest of the hospital, so that it is possible to control the temperature of each operating room independently from any other room in the building. The lighting system also should be in duplicate in case of any breakdown during operations.

A MEMBER: What provision is made today for sound-proof or quiet rooms for night nurses? As a matter of fact, a night nurse never sleeps in the day time.

MR. COOLIDGE: In the most recent nurses' homes we are arranging sleeping quarters for the nurses on the roof with convenient toilet. These quarters are open on three sides, with a permanent roof on top and Venetian blinds which can be pulled down to keep out the rain or snow when desired. The portion which is used by the night nurses has a solid wall shutting off their quarters from the remainder.

A MEMBER: I would like to know about the electric elevators. What type is being used in the modern hospital?

MR. COOLIDGE: The modern electric elevator is designed on an entirely different principle from the old type of hydraulic elevator. The power is not applied to pull the elevator up but to pull it down, the weight of the elevator being counterbalanced by the heavy weights which run in the elevator well and move up and down in reverse as the elevator goes up or down. The machinery is generally on top of the building in a pent house instead of being on the ground. The direct current is better than the alternating current for elevators as it allows for finer adjustment in making landings at the different levels. The very latest and best device is one that is controlled by the Otis Elevator Company which automatically stops the floor of the car exactly level with the floor at which the landing is to be made. This is quite important for unloading wagons and trucks with heavy carboys and other laboratory supplies.

DR. F. W. PEABODY, Boston: I would like to know about the heating system in a laboratory. The radiators are either under the windows or at the wall, and people don't want to waste the wall space.

MR. COOLIDGE: The best thing is to have the radiators where the windows are and have the working laboratory shelf-table moved out from the window with a board at the back of it to prevent papers or materials from falling behind. From the back of the table extending down to within a few inches of the floor there should be either a metal or a wooden board covered with asbestos. This allows the cool air to come in at the floor level and be heated and rise so as to heat the current of cold air which is falling from the glass of the window. The reason that the radiators are put where the windows are is that in a laboratory which is supposedly high, the air is cooled by contact with the glass and would cause a very cold draught to come on the head and shoulders of anybody working at a window table.

Original Articles.

AN ANALYSIS OF ONE HUNDRED AND EIGHTY NECROPSIED CASES OF PNEUMONIA, WITH REFERENCE TO ANATOMIC COMPLICATIONS AND BACTERIAL CAUSES.

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THIS report is based upon a pathologic and bacteriologic study of the one hundred and thirty-nine cases of lobar pneumonia and of the forty-one cases of bronchopneumonia which came to necropsy at Base Hospital No. 101, St.

Nazaire, France, during the year 1918. At the outset, it must be admitted that the analysis does not offer much in the way of new information and that it must lose considerably in interest by reason of the fact that the data are four years old. However, the fact remains that a series of as many as one hundred and eighty cases of pneumonia with necropsy deserves to be placed upon record, as such reports are always of value in making statistical studies. It is for this reason alone that the findings in this group of patients have been summarized and reported without comment.

With the exception of a few French civilians, all of these patients were American soldiers. The great majority were, of course, between the ages of twenty-one and thirty-one.

The object of this study was (1) to note the frequency of the various anatomic complications in cases shown at necropsy to be lobar pneumonia and bronchopneumonia respectively, and (2) to enumerate the bacterial causes, in so far as they were determined, in these two groups.

THE ANATOMIC COMPLICATIONS OF LOBAR PNEUMONIA.

In one hundred and thirty-nine patients necropsy revealed lobar pneumonia. In Table I. the anatomic complications found at postmortem and the bacterial causes, where same were determined, are given *seriatim*.

TABLE I.

BACTERIOLOGY AND COMPLICATIONS IN 139 FATAL CASES OF LOBAR PNEUMONIA.

No.	Bacteriology	Complications (at necropsy)
1.	Pneumococcus—Type IV	Purulent pericarditis; pleural empyema; fibrinous pleurisy.
2.	Pneumococcus—not typed	Purulent pericarditis; pleural empyema.
3.	Pneumococcus—not typed	None.
4.	Pneumococcus—not typed	Purulent pericarditis; pleural empyema; fibrinous pleurisy.
5.	Pneumococcus—not typed	Purulent pericarditis; purulent peritonitis.
6.	Pneumococcus—not typed	Purulent peritonitis.
7.	Not determined.	None.
8.	Not determined.	Pleural empyema.
9.	Not determined.	Pleural adhesions; toxic nephrosis.
10.	Not determined.	None.
11.	Not determined.	Pleural empyema; fibrinous pericarditis; cardiac dilatation; purulent mediastinitis; splenomegaly.
12.	Pneumococcus—not typed.	Pleural empyema; fibrinous pleurisy.
13.	Not determined.	Pleural empyema; cardiac dilatation.
14.	Not determined.	Pleural empyema; cardiac dilatation; acute diffuse glomerular nephritis.
15.	Pneumococcus—not typed.	Pleural empyema.
16.	Pneumococcus—Type II.	Toxic nephrosis.
17.	Pneumococcus—not typed.	Pleural empyema; purulent pericarditis.
18.	Pneumococcus—Type I.	None.
19.	Pneumococcus—Type IV.	Pleural empyema.
20.	Pneumococcus—not typed.	None.
21.	Pneumococcus—not typed.	None.
22.	Not determined.	Pleural empyema; acute endocarditis.
23.	Pneumococcus—type I.	Toxic nephrosis.
24.	Not determined.	Interlobar empyema.
25.	Pneumococcus—not typed.	Cardiac dilatation.
26.	Pneumococcus—Type I.	Cardiac dilatation; toxic nephrosis.
27.	Pneumococcus—Type IV.	Pleural empyema; purulent pericarditis.
28.	Not determined.	Pleural empyema.
29.	Pneumococcus—Type IV.	None.
30.	Pneumococcus—Type I.	Pleural empyema; cardiac dilatation.
31.	Not determined.	Pleural empyema; lung abscess; pneumothorax.
32.	Pneumococcus—not typed.	Pleural empyema; purulent pericarditis; purulent mediastinitis; chronic ulcerative colitis.
33.	Pneumococcus—not typed.	None.
34.	Not determined.	Pleural empyema; toxic nephrosis.
35.	Streptococcus, non-hemolytic.	Pleural empyema; toxic nephrosis.
36.	Pneumococcus—not typed.	Toxic nephrosis; otitis media purulenta acuta.
37.	Streptococcus, non-hemolytic.	None.
38.	Pneumococcus—not typed.	None.
39.	Pneumococcus—not typed.	Pleural empyema; cardiac dilatation.
40.	Pneumococcus—not typed.	None.
41.	Pneumococcus—not typed.	Pleural empyema; purulent pericarditis.
42.	Pneumococcus—not typed.	None.
43.	Pneumococcus—not typed and Streptococcus, non-hemolytic.	None.
44.	Pneumococcus—not typed and Streptococcus.	Fatty degeneration of heart.

TABLE I (*continued*).

BACTERIOLOGY AND COMPLICATIONS IN 139 FATAL CASES OF LOBAR PNEUMONIA.

No.	Bacteriology	Complications (at necropsy)
45.	Not determined.	Pleural empyema.
46.	Pneumococcus—not typed.	None.
47.	Pneumococcus—not typed.	Pleural empyema.
48.	Pneumococcus—not typed.	Pleural empyema; fibrinous pleurisy.
49.	Pneumococcus—not typed.	Pleural empyema.
50.	Pneumococcus—not typed.	None.
51.	Pneumococcus—not typed.	Pleural empyema.
52.	Pneumococcus—not typed.	Pleural empyema.
53.	Pneumococcus—not typed.	Fibrinous pleurisy.
54.	Pneumococcus—not typed.	Pleural empyema; purulent pericarditis.
55.	Pneumococcus—not typed.	None.
56.	Pneumococcus—not typed.	None.
57.	Pneumococcus—not typed.	None.
58.	Pneumococcus—not typed.	Pleural empyema; purulent pericarditis.
59.	Pneumococcus—not typed.	None.
60.	Not determined.	Fibrinous pleurisy.
61.	Pneumococcus—not typed.	Pleural empyema; fibrinous pleurisy.
62.	Not determined.	None.
63.	Not determined.	Fibrinous pleurisy.
64.	Not determined.	None.
65.	Not determined.	Fibrinous pleurisy.
66.	Not determined.	Pleural empyema.
67.	Pneumococcus—not typed.	None.
68.	Streptococcus hemolyticus.	None.
69.	Pneumococcus—Not typed.	None.
70.	Not determined.	None.
71.	Pneumococcus—not typed.	None.
72.	Pneumococcus—not typed.	None.
73.	Not determined.	None.
74.	Pneumococcus—not typed.	None.
75.	Pneumococcus—not typed.	None.
76.	Pneumococcus—not typed.	None.
77.	Pneumococcus—not typed.	None.
78.	Pneumococcus—not typed.	None.
79.	Not determined.	None.
80.	Not determined.	Pleural empyema.
81.	Not determined.	Pleural empyema.
82.	Not determined.	None.
83.	Streptococcus.	Purulent pericarditis; fibrinous pleurisy; meningococcus meningitis.
84.	Not determined.	Purulent pericarditis.
85.	Pneumococcus—not typed.	Pleural empyema; purulent peritonitis.
86.	Pneumococcus—Type IV.	None.
87.	Pneumococcus—Type IV.	None.
88.	Pneumococcus—Type I.	None.
89.	Pneumococcus—Type I.	Pleural empyema.
90.	Not determined.	Pleural empyema.
91.	Not determined.	Pleural empyema.
92.	Streptococcus hemolyticus.	Purulent pericarditis.
93.	Pneumococcus—Type I.	Pleural empyema; purulent pericarditis; purulent peritonitis.
94.	Not determined.	Pleural empyema.
95.	Not determined.	None.
96.	Not determined.	None.
97.	Not determined.	Pleural empyema.
98.	Not determined.	None.
99.	Not determined.	None.
100.	Pneumococcus—not typed.	Pneumococcus membranous tracheitis and laryngitis.
101.	Pneumococcus—not typed.	Purulent pericarditis.
102.	Not determined.	None.
103.	Not determined.	Pleural empyema.
104.	Not determined.	None.
105.	Pneumococcus—not typed.	Pleural empyema; purulent peritonitis.
106.	Pneumococcus—not typed.	Fibrinous pleurisy; pericarditis with effusion.
107.	Not determined.	Fibrinous pleurisy; toxic nephrosis.
108.	Pneumococcus—not typed.	Fibrinous pleurisy; pericarditis with effusion; toxic nephrosis.
109.	Pneumococcus—not typed.	Pleural empyema; cardiac dilatation; toxic nephrosis.
110.	Not determined.	Pleurisy with effusion; pericarditis with effusion.
111.	Pneumococcus—not typed.	Toxic nephrosis.
112.	Pneumococcus—not typed.	Pleural empyema; purulent pericarditis; toxic nephrosis; gallstone in common duct.

TABLE I (*concluded*).

BACTERIOLOGY AND COMPLICATIONS IN 139 FATAL CASES OF LOBAR PNEUMONIA.

No.	Bacteriology	Complications (at necropsy)
113.	Pneumococcus—not typed.	Meningococcus meningitis.
114.	Not determined.	Pleurisy with effusion.
115.	Not determined.	Pleurisy with effusion.
116.	Not determined.	Pleural empyema; cardiac dilatation; splenomegaly.
117.	Pneumococcus—not typed.	Pleural empyema; purulent pericarditis; cardiac dilatation.
118.	Pneumococcus—not typed.	Pleural empyema; cardiac dilatation.
119.	Not determined.	Purulent pericarditis.
120.	Pneumococcus—not typed.	Pleural empyema; purulent pericarditis; toxic nephrosis.
121.	Pneumococcus—not typed.	Pneumococcus meningitis.
122.	Not determined.	None.
123.	Pneumococcus—not typed.	Purulent pericarditis.
124.	Not determined.	None.
125.	Not determined.	Pleural empyema.
126.	Not determined.	Toxic nephrosis.
127.	Not determined.	None.
128.	Pneumococcus—not typed.	None.
129.	Pneumococcus—not typed.	Pleural empyema; purulent pericarditis; purulent peritonitis.
130.	Not determined.	Cardiac dilatation.
131.	Not determined.	Purulent pericarditis.
132.	Pneumococcus—not typed.	Pulmonary infarct.
133.	Not determined.	Purulent pericarditis.
134.	Not determined.	Chronic adhesive pleurisy; hydronephrosis.
135.	Not determined	Pleural empyema.
136.	Pneumococcus—not typed.	Meningococcus meningitis; chronic adhesive pleurisy.
137.	Not determined.	Pleural empyema; toxic nephrosis.
138.	Pneumococcus—not typed.	Pleural empyema; purulent pericarditis.
139.	Pneumococcus—not typed.	None.

The various anatomic complications found, with the frequency of their occurrence, are summarized in Table II.

TABLE II.

COMPLICATIONS NOTED AT NECROPSY IN 139 FATAL CASES OF LOBAR PNEUMONIA.

Complication.	Number of Cases.	Percentage.
Pleural empyema	53	38.1
Purulent pericarditis	24	17.2
Toxic nephrosis	15	10.7
Fibrinous pleurisy	13	9.3
Cardiac dilatation	12	8.6
Purulent peritonitis	6	4.3
Pleurisy with effusion	3	2.1
Chronic adhesive pleurisy	3	2.1
Pericarditis with effusion	3	2.1
Meningococcus meningitis	3	2.1
Purulent mediastinitis	2	1.4
Splenomegaly	2	1.4
Interlobar empyema	1	0.7
Lung abscess	1	0.7
Pneumothorax	1	0.7
Pulmonary infarct	1	0.7
Pneumococcus membranous tracheitis and laryngitis	1	0.7
Fibrinous pericarditis	1	0.7
Acute endocarditis	1	0.7
Fatty degeneration of heart	1	0.7
Acute diffuse glomerular nephritis	1	0.7
Hydronephrosis	1	0.7
Chronic ulcerative colitis	1	0.7
Gallstones in common duct	1	0.7
Pneumococcus meningitis	1	0.7
Otitis media purulent acuta	1	0.7

In this series pleural empyema and purulent pericarditis hold a higher percentage than in most statistics. The figure of 38.1 per cent. for empyema varies widely from that of 5.1 per cent. given by Norris on the basis of 973 necropsies.

In the case of pericarditis, Stone's series of 300 necropsies gave results approximating those of the present group. In his report, seventy-two (or 24 per cent.) of the postmortems showed a pericarditis, and in forty-four (or 15 per cent. of the entire series), there was a purulent exudate.

THE BACTERIAL CAUSES OF LOBAR PNEUMONIA.

Table III summarizes the bacterial causes in the eighty-five cases of lobar pneumonia in which the same were determined.

TABLE III.

BACTERIAL CAUSE IN 85 FATAL CASES OF LOBAR PNEUMONIA.

Organism.	Number of Cases.	Percentage.
Pneumococcus, total	78	91.7
Pneumococcus, not typed	64	75.2
Pneumococcus, Type I	7	8.2
Pneumococcus, Type II	1	1.1
Pneumococcus, Type III	0	0.0
Pneumococcus, Type IV	6	7.0
Streptococcus, total	5	5.8
Streptococcus hemolyticus	2	2.3
Streptococcus, non-hemolytic	3	3.5
Pneumococcus and Streptococcus combined	2	2.3

THE ANATOMIC COMPLICATIONS OF BRONCHOPNEUMONIA.

In forty-one patients necropsy revealed bronchopneumonia. In Table IV, the anatomic complications found at postmortem and the bacterial causes, where same were determined, are given *seriatim*.

TABLE IV.

BACTERIOLOGY AND COMPLICATIONS IN 41 FATAL CASES OF BRONCHOPNEUMONIA.

No.	Bacteriology.	Complications (at Necropsy).
1.	Bacillus influenzae and streptococcus.	Pleural empyema.
2.	Streptococcus.	None.
3.	Pneumococcus—not typed.	Pleural empyema; purulent pericarditis.
4.	Pneumococcus—not typed.	None.
5.	Streptococcus, non-hemolytic.	Toxic nephrosis.
6.	Pneumococcus—not typed.	Fibrinous pericarditis.
7.	Bacillus influenzae and streptococcus.	Toxic nephrosis.
8.	Streptococcus, non-hemolytic.	None.
9.	Pneumococcus and streptococcus.	None.
10.	Streptococcus.	Pleural empyema; pneumothorax.
11.	Streptococcus.	None.
12.	Streptococcus and pneumococcus.	None.
13.	Not determined.	None.
14.	Not determined.	None.
15.	Not determined.	None.
16.	Not determined.	None.
17.	Not determined.	None.
18.	Not determined.	None.
19.	Streptococcus.	Meningococcus meningitis.
20.	Not determined.	Empyema of sphenoidal sinuses; cerebral congestion.
21.	Not determined.	None.
22.	Pneumococcus—Type IV.	Toxic nephrosis.
23.	Not determined.	Pleural empyema.
24.	Not determined.	None.
25.	Pneumococcus—not typed.	None.
26.	Bacillus influenzae and pneumococcus	None.
27.	Bacillus influenzae and pneumococcus—Type IV.	None.
28.	Streptococcus.	Pneumothorax.
29.	Bacillus tuberculosis.	Cardiac dilatation.
30.	Bacillus tuberculosis.	None.
31.	Not determined.	None.
32.	Not determined.	Pleurisy with effusion; empyema of nasal accessory sinuses.
33.	Not determined.	Fatty degeneration of heart and kidneys; cerebral congestion.
34.	Not determined.	Cardiac dilatation.
35.	Not determined.	Empyema of mastoid and ethmoid sinuses.
36.	Streptococcus.	Cardiac dilatation.
37.	Not determined.	None.
38.	Not determined.	None.
39.	Bacillus tuberculosis.	Chronic adhesive pleurisy; cardiac dilatation; splenomegaly.
40.	Streptococcus and staphylococcus, non-hemolytic.	None.
41.	Not determined.	None.

The various anatomic complications found with the frequency of their occurrence are summarized in Table V.

TABLE V.

COMPLICATIONS NOTED AT NECROPSY IN 41 FATAL CASES OF BRONCHOPNEUMONIA.

Complication.	Number of Cases.	Percentage.
Pleural empyema	4	9.7
Cardiac dilatation	4	9.7
Toxic nephrosis	3	7.3
Empyema of cranial sinuses	3	7.3
Pneumothorax	2	4.8
Cerebral congestion	2	4.8
Pleurisy with effusion	1	2.4
Chronic adhesive pleurisy	1	2.4
Purulent pericarditis	1	2.4
Fibrinous pericarditis	1	2.4
Fatty degeneration of heart and kidneys	1	2.4
Meningococcus meningitis	1	2.4
Splenomegaly	1	2.4

THE BACTERIAL CAUSES OF BRONCHOPNEUMONIA.

Table VI summarizes the bacterial causes in the twenty-three cases of bronchopneumonia in which the same were determined.

TABLE VI.

BACTERIAL CAUSE IN 23 FATAL CASES OF BRONCHOPNEUMONIA.

Organism.	Number of Cases.	Percentage.
Streptococcus	8	34.7
Pneumococcus	5	21.7
Bacillus tuberculosis	3	13.0
Streptococcus and Pneumococcus	2	8.7
Streptococcus and Bacillus influenzae	2	8.7
Pneumococcus and Bacillus influenzae	2	8.7
Streptococcus and Staphylococcus	1	4.3

SUMMARY.

This report summarizes the anatomic complications and the bacteriologic causes of infection in the one hundred and thirty-nine cases of lobar pneumonia and the forty-one cases of bronchopneumonia which came to necropsy at Base Hospital No. 101, St. Nazaire, France, during the year 1918.

In reference to lobar pneumonia, the principal anatomic complications (*vide* Table II) were pleural empyema (38.1 per cent.), purulent pericarditis (17.2 per cent.), toxic nephrosis (10.7 per cent.), fibrinous pleurisy (9.3 per cent.), and cardiac dilatation (8.6 per cent.). The pneumococcus alone (*vide* Table III) was the organism responsible for the infection in 91.7 per cent. of the cases; with the streptococcus, it accounted for 2.3 per cent.

In reference to bronchopneumonia, the principal anatomic complications (*vide* Table V) were pleural empyema (9.7 per cent.), cardiac dilatation (9.7 per cent.), toxic nephrosis (7.3 per cent.), and empyema of the cranial sinuses (7.3 per cent.).

The streptococcus alone (*vide* Table VI) was the organism responsible for the infection in 34.7 per cent. of the cases; the pneumococcus in 21.7 per cent.; the Bacillus tuberculosis, in 13.0 per cent.

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THE EFFECT OF THE BLOOD-SUGAR LEVEL ON ADRENAL SECRETION AND SYMPATHETIC ACTIVITY—A PRELIMINARY NOTE.

BY W. B. CANNON, M.D., M. MC IVER, M.D.,
AND
S. W. BLISS, A.B., BOSTON.

[From the Laboratories of Physiology in the Harvard Medical School.]

THE normal blood-sugar level is usually stated to be 0.1 per cent. According to Allen it is "obstinately maintained" at that percentage "through prolonged starvation, almost up to death." It may rise considerably above that level, as, for example, after ingestion of large amounts of sugar and in emotional excitement and in pathological conditions; but only recently has a reduction below the level been recognized. Mann and Magath have reported that removal of the liver results in a progressive decrease of blood sugar, accompanied by characteristic symptoms, prominent among which are convulsions and coma. These symptoms promptly disappear when glucose in suitable amounts is injected intravenously. The effect of insulin is to reduce the glucose percentage in normal animals below the physiological level, and here also a fall to approximately 0.045 per cent., in rabbits, is attended by convulsive seizures, by coma, and later by death, if no treatment is given. Obviously, reduction of the glucose content of the blood to approximately half its normal amount may be highly dangerous to the organism.

There is evidence that convulsions are associated with discharge of sympathetic impulses. During epileptic seizures the pupils are widely dilated. Strychnine or sodium carbonate well-known convulsive agents, evoke increased adrenal secretion. Patients who have received insulin and whose blood sugar has been reduced below 100 mgs. per 100 c.c. testify to certain symptoms (pallor or flushing, dilation of pupils, rapid pulse, sweating) recognized as premonitory of danger. Wilder, of the Mayo Clinic, has reported that his own subjective experience, when administration of insulin reduced his blood sugar below the normal, was similar to that which he had after a dose of adrenalin. All these observations point to the probability that the exhibition of insulin will bring about bodliy conditions attended by sympathetic discharge. If that should prove true it would have highly interesting bearings on the normal uniformity of the minimal blood-sugar percentage.

To test the question, we have observed the effects of injecting insulin in cats. Ether has been reported as interfering with the action of insulin, an observation which is supported by our experience. Griffith has found, however, that chloralose interferes little, if at all, with sugar metabolism, and we have therefore used chloralose as an anesthetic. It is best given in milk, which the animal drinks and thereafter more or less quietly sinks into anesthesia. The heart, isolated from the central nervous system by section of the vagi and removal of the stellate ganglia, is thereafter subject only to influences brought to it by the blood stream. It is highly sensitive to an increased amount of adrenin in the circulating blood, as shown by a faster rate of beat, and offers a satisfactory test for increased adrenal secretion. Our results may be stated briefly as follows:

If one adrenal gland is removed and the other denervated, or if both glands are removed, the intravenous injection of 10 units of insulin causes a fall of blood sugar (determined by the Folin-Wu method) without increase of heart rate. There is, however, erection of the hairs on the tail and dilation of the pupil still innervated by sympathetic fibers, when the blood sugar drops below approximately 80 mgs. per 100 c.c.

If the adrenal glands are present and normally innervated, reduction of blood sugar by insulin, to a point varying in different cases between 0.1 and 0.07 per cent., is accompanied by

an increase in the heart rate. This may be called the critical point. *As the sugar percentage continues to fall, the heart rate continues to rise.* The increased rate has been as high as 36 beats per minute.

If the adrenal glands are active, as shown by the more rapid pulse, the fall in blood sugar does not continue at the same rate after the critical point has been reached, as it did before. The curve flattens, as would be the case if sugar were liberated into the blood stream. After flattening, the curve may so remain or may start downward again, with the large doses of insulin (10 units) that we have used in the experiments now reported.

The injection of glucose intravenously, when the heart rate is augmented from adrenal secretion and other signs of sympathetic activity are present, is promptly followed by the subsidence of all these signs.

The foregoing experiments reveal a hitherto unsuspected mechanism which has for its function the maintenance of the physiological percentage of blood sugar. It is delicately adjusted, so that when conditions arise tending to lower the sugar content of the blood below the physiological point (approximately 0.08 to 0.1 per cent.), sugar is set free from the reserves. If the reserves are absent, as in the experiments of Mann and Magath, where the liver was extirpated, or if the agency reducing the sugar content of the blood is too potent, as when excessive doses of insulin are given, the mechanism is ineffective, and the result is disastrous to the organism—convulsions and coma are followed by death. Clearly this protective arrangement in the operation of the sympathetic system is of great importance to the normal status of the body.

A CASE OF FILARIASIS APPARENTLY CONTRACTED IN BOSTON.

BY GEORGE CHEEVER SHATTUCK, M.D., BOSTON.

[From the Service for Tropical Diseases at the Boston City Hospital.]

The case to be described is of unusual interest because the patient was born in Boston, states that she has lived in this neighborhood all her life, and that she has not at any time been far away from Boston. She never travelled in the South or crossed the ocean.

A study of filariasis in a number of Southern cities was made by Edward Francis.[1] The result of his blood examinations for the larvae of Filaria bancrofti is shown in the following table.

Localities	Persons Examined	Filaria Found
Charleston, S. C.	400	77 or 19+%
Columbia, S. C.	221	3
Beaufort, S. C.	67	1
Georgetown, S. C.	45	0
Savannah, Ga.	287	0
Milledgeville, Ga.	100	0
Jacksonville, Fla.	200	2
Tampa, Fla.	115	3
Mobile, Ala.	131	0
New Orleans, La.	304	0

Enquiry about the 9 cases found in cities other than Charleston elicited the important information that the individuals in question had been born and raised in Charleston or had spent a considerable period of time in Charleston, or had been born in Cuba, a well known filarial focus.

Dr. Francis says that "the data point to Charleston as the one active endemic focus of the disease in the South and indicate that cases found outside of Charleston have derived their infection either from residence in Charleston or from residence at some place outside the United States, as in Cuba. The data indicate that the isolated cases found outside of Charleston do not constitute a new focus for transmission of the disease to people with whom they come in contact in their new locality. At first thought it is surprising that each case transplanted from Charleston to another city does not become a focus for the spread of infection. This is accounted for on the grounds of the great difficulties which attend the mosquito transmission of the disease." Dr. Francis then explains fully the difficulties of transmission referred to and says that the "nonspread of filariasis in cities to which infected Charlestonians have been transported is accounted for by the absence of mass blood infection in those transported cases and the absence of mass mosquito biting of those cases in their new localities."

Assuming Francis' conclusions to be correct in general it would, nevertheless, seem probable that occasionally an individual might contract filariasis in any place where there existed an infected individual and a species of mosquito capable of serving as intermediate host. The prevailing mosquito in Charleston was found to be Culex fatigans, and many such mosquitoes caught in rooms occupied by filarial patients were found to contain the larvae of Filaria bancrofti.

Examination of 50 examples of Aedes calopus similarly exposed were all negative for filaria. It is further stated that Aedes calopus has never been proven an efficient host for Filaria bancrofti. Consequently, it is believed that filariasis in Charleston is transmitted by Culex fatigans.

According to Brues,[2] Culex pipiens is very common in Massachusetts and Manson-Bahr[3] says that in China this species transmits Filaria bancrofti. Moreover, imported cases of this kind of filariasis are found occasionally in Boston. Consequently, it seems theoretically possi-

ble that the infection might occasionally be transmitted here.

The filarial larvae found in the case to be described resembled those of Filaria bancrofti and were found in blood taken at night. The patient had well marked elephantiasis of the left leg, and elephantiasis is often associated with the presence of Filaria bancrofti. It is conceivable that the larvae were not those of Filaria bancrofti because they were not specifically identified and no specimens were preserved, but the contrary conclusion seems more probable.

If the statements of the patient be accepted, —and there seems no reason for doubting her veracity,—it is difficult to escape the conclusion that she contracted filariasis in or near Boston.

REPORT OF CASE.

Extract from Records of Massachusetts General Hospital.

Patient admitted May 11, 1917. Female. White. Single. Age 25. Occupation; cigar labeller. Birthplace and residence: Charlestown, Massachusetts.

Family history negative. Working conditions favorable, work done sitting down.

Past history unimportant except that 10 years ago both legs were run over by a wagon with the result that patient was in bed 5 weeks. Recovery apparently complete.

Present illness: Three and a half years ago (1914) patient noticed swelling of left ankle and instep. The foot was not red, hot, or tender, and patient could walk without difficulty. After changing from low to high shoes the swelling diminished. Swelling increased during the day and diminished at night. About 2 years ago (September, 1915) the left leg and foot became very swollen as far up as the knee. The leg was red and hot but not painful or sensitive and walking was not difficult. Patient consulted physician who kept her in bed for three weeks and applied a tight bandage. The swelling diminished. The leg has since been kept bandaged until two months ago, when the swelling increased again and the leg became red and hot but was not painful or sensitive.

Physical examination negative except for condition of left leg, which was moderately swollen and pitted on pressure. Diameter of left calf 15 inches; right calf 13 inches. Rectal examination was negative and no evidence of pressure or other cause for swelling was found. The diagnosis was chronic phlebitis.

Extract from the Records of the Massachusetts Homeopathic Hospital.

Patient admitted to wards of Dr. C. T. Howard, March 9, 1922, for elephantiasis of the left leg.

The swelling which began in the left instep has gradually extended upward to the groin.

Measurements (inches)	Left Leg	Right Leg
Instep	9½	8¾
Ankle	10½	8½
Calf	18	12½
Below patella	17	13½
Above knee	20	15½
Thigh	22½	19½
Upper thigh	25	21

General examination otherwise negative.

Urine negative.

Blood: March 10, 1922, Hemoglobin 80 per cent. Red Count: 4,270,000; White Count: 4,150. Wassermann test negative. Several examinations were made for filaria and on two occasions, before operation, filariae were found in blood taken at midnight. This finding was confirmed by Dr. William H. Watters, Pathologist of the Massachussetts Homeopathic Hospital.

On March 13th a Kondoleon operation was performed by Dr. C. T. Howard. After the operation several examinations of the blood for filaria were negative, but before the patient was discharged the filaria was found again. The diagnosis was filariasis and elephantiasis.

I first saw the patient when she was at the Massachusetts Homeopathic Hospital and again in Charlestown on March 23, 1923, nearly a year after her discharge from the hospital. Blood smears taken on this occasion, at 9 P.M., showed no filaria and the patient was unwilling to enter hospital for further study. No history of close association with foreigners during working hours or at other times could be elicited. The father was born in Boston and the mother in Ireland.

DISCUSSION.

Two common forms of elephantiasis are generally recognized, namely, the tropical form which is seen in filarial regions, and the sporadic form which may be found anywhere in temperate regions. There seems to be justification for the recognition of a third form of congenital origin, and study of cases shows that it may be difficult to draw the line between atypical cases of elephantiasis and certain types of lymphangioma.

That there is commonly a causal relationship between the filaria and elephantiasis of the tropics was shown by Manson many years ago, and there seems no reason to doubt this conclusion. That most of the sporadic cases of elephantiasis have nothing to do with filarial infection seems equally probable.

However, after studying cases of sporadic elephantiasis in Boston[4] some years ago, I reached the conclusion that no essential pathological or clinical difference had been shown between sporadic elephantiasis and tropical elephantiasis, and further, that sporadic elephantiasis is a syndrome of multiple etiology in the

production of which the interaction of lymph stasis and of inflammation, presumably of bacterial origin, generally play a determining rôle. If this be true, it appears that the filaria should be regarded as an important predisposing factor in the production of most tropical cases of elephantiasis but that non-filarial cases may be expected to occur in the tropics as well as in temperate regions. Such non-filarial cases may perhaps be fairly common in certain tropical countries. Conversely, it is conceivable that the filaria may occasionally play a part in the production of non-tropical elephantiasis. The case presented above gives color to such an hypothesis and leads to the hope that, in future, the filaria will be searched for persistently in all sporadic cases of elephantiasis. Failure to find it, however, does not exclude the filaria as a possible factor in the case, for several reasons; firstly, the parent worm may have died, secondly, the lesions produced may prevent the embryos from gaining access to the blood, or thirdly, they might be overlooked repeatedly when scarce, especially if thin instead of thick blood films were used for examination.

Acknowledgment.—Thanks are offered to the Massachusetts General Hospital, and to the Massachusetts Homeopathic Hospital for permission to publish their records of this case, and to Drs. William H. Watters and C. T. Howard for their contributions.

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A CASE OF A CAMBRIC NEEDLE IN STOMACH WALL.

BY JOHN W. LANE, A.B., M.D., F.A.C.S., BOSTON.

THERE have been many cases of foreign bodies removed from the interior of the stomach, Friedenwald and Rosenthal in the *New York Medical Journal* (July 18, 1903) having collected ninety cases from the literature. These foreign bodies comprised almost any amount and varieties, including silver forks. Most of the cases were in patients who suffered from mental derangement. The case which I here report is unusual in that the needle was found in the posterior wall of the stomach.

Miss Martha M., 29 years, nurse. Referred by Dr. J. F. Fennessey. The Family History and Past History have no bearing on the case.

Present Illness.—Three weeks before entrance to hospital on July 24, 1922, patient began to have sharp, shooting pains referred to region above the umbilicus, lasting a few seconds and recurring about three times a day, and about five minutes after eating had a distressing tight feeling in the epigastrium, irrespective of whether she ate a light or heavy meal. This distressing sensation would last about one and a half hours. Two weeks before entrance she began to have steady pain in epigastrium, especially worse at night, but relieved by sodium bicarbonate and bismuth powders. Patient was radiographed by Dr. P. F. Butler, who reported a foreign body in the stomach evidently fixed near the antrum. General physical examination was negative.

Operation.—St. Margaret's Hospital, July 25, 1922. A right rectus incision was made from the costal margin to the umbilicus. On exploring the stomach an indurated mass two inches

by three-quarters inch could be felt on posterior wall of the stomach near the greater curvature and about two inches from the pylorus. The gastro-colic omentum was incised and an incision made in the posterior wall of the stomach over the mass. The tip of a needle was seen and this was seized by artery forceps and needle removed. It was imbedded in the wall of stomach and proved to be an ordinary cambric needle, black in color. The wound in stomach wall was closed by two layers of Pagenstecher sutures. The abdominal wound was closed in layers. The patient made a normal convalescence and was discharged well in two weeks.

At present writing (May 26) patient is well and has gained 19 pounds in weight.

On careful interrogation it was evident that the patient had no knowledge of swallowing the needle, and therefore it is a matter of conjecture as to how long the needle had been in the stomach wall.

The patient is a very capable and sensible nurse, and I cannot but believe that the swal-

lowing of the needle was purely accidental. There had been no previous operation performed upon her. The print of the x-ray plate rather poorly shows the needle between "A" and "B."

Book Reviews.

An Index to General Practice. By A. CAMPBELL STARK, M.B. and B.S. (Lond.), L.S.A. (Eng.), Ph.C. Exhibitioner and Gold Medallist of the University of London; Gold Medallist of the Society of Apothecaries; Late Lecturer on Biology at Westminster Hospital Medical School; Late Demonstrator on Materia Medica at St. George's Hospital Medical School; Late District Surgeon St. John Ambulance Association; Late Surgeon to the Wanstead Park Military Hospital; Author of "Practical Pharmacy for Medical Students," etc., etc. New York: William Wood and Company. 1923.

General practice is an art, the acquisition of which takes many years of experience after the medical school and hospital are left behind. In most medical schools little or no attention is paid to instruction in this art, although, paradoxically enough, it is the object towards which the education of the larger proportion of our medical students is directed.

Dr. Stark, after more than forty years of general practice in London, has endeavored to analyze the results of his experience and transcribe it for the benefit of the thousands who can otherwise learn this art only by experience—and often by very bitter experience. Even those among us who are not specialists generally have some particular forte in our profession, and in reading of Dr. Stark's method of handling the specialty or special forte his omissions or (as would seem to us) his errors stand out too clearly. Those who have not done general practice should at this point realize that the general practitioner who must handle the simpler problems of all the specialties cannot handle them as the specialist might. He must seek his own solution of his difficulties, and with proper fundamental training he generally does it pretty well.

The pediatrician will not agree with Dr. Stark in his use of proprietary foods; nevertheless, it must be acknowledged that many practitioners use them, and the author shows that he is alive to the most real danger in infant feeding—that of infected milk.

Certain phases of practice that this book deals with, such as the dispensing of drugs and panel insurance practice, of course, apply to the English system and would be of little use to the American practitioner.

The volume is well worth reading and much useful information can be gained from it.

Heliotherapy. By A. ROLLIER, M.D. London: Henry Frowde and Hodder & Stoughton.

This volume of nearly 300 pages, profusely illustrated with pictures of actual patients, x-ray plates, etc., covers the entire field of heliotherapy. I wish that every physician, whether general practitioner or specialist, could read and profit by its contents. In these days of ultra-scientific medicine, of anti-toxins, vaccines of all kinds—good, bad, and indifferent—it is refreshing to come back to first principles and to see emphasis laid on Nature's own curative agents. In his foreword Sir John Gauvain puts this so well that I cannot forbear from quoting his own words:

"It is ingrained in healthy mortals to love light. Even those of sedentary habits and unfitted for an outdoor existence prefer well-lighted and cheerful surroundings to darkness and gloom. A child before the age of reason instinctively seeks the light and abhors darkness. Light and laughter synchronize—darkness and depression do likewise.

"A very sick person may be so enfeebled that he desires darkness, not being sufficiently virile to have power of response to the stimulus of light; he who is convalescing from disease welcomes light, hungers for the genial rays and responds to their influence. Few there are who do not look with regret at the departing swallow and wish to follow it to distant sunlit regions. The wise, whom kindly circumstance permits, take inspiration from that southward flight and also migrate.

"Mirth is banished when darkness envelops us, our senses become deadened and dulled, and sleep supervenes. Life is at its lowest ebb in the hours of darkness; at that time death most nearly and most often approaches. The darkness of the tomb is synonymous with complete cessation of responce, with death.

"In all ages there have been sun-worshippers. It could not be otherwise. Terrestrial life craves the golden rays. They are the world's great tonic which stimulate and enliven, but in undue excess intoxicate."

While it is true that Dr. Rollier is assisted in his work by other factors, such as altitude, a larger amount of sunlight than is given us New England dwellers, freedom from dust and raw east winds, nevertheless, sunlight is the practical agent in producing his results. His chapter on statistics, while not of such great interest, is distinctly convincing.

The section by Dr. Rosselet on the scientific basis of heliotherapy presents a physical and biological study of light. This goes as far as anyone has yet gone in endeavoring to explain how and why sunlight does good. Dr. H. J. Schmid, radiologist to the Leysin Clinics, with numerous x-ray plates demonstrates in a most

striking manner not only what we already know concerning the value of the x-ray in the diagnosis of tuberculous bone and joint diseases, but the part played by heliotherapy in its actual cure. Dr. E. Amstad, surgeon and director of the radiotherapy department of the Leysin Clinics, discusses the effects of heliotherapy, radiotherapy and phototherapy. In addition, he takes up the question of heliotherapy in various non-tuberculous diseases.

There is an excellent index and bibliography.

This book should be in the library of every physician.

Current Literature Department.

ABSTRACTORS.

GERARDO M. BALBONI — CHESTER M. JONES
WILLIAM B. BREED — CHARLES D. LAWRENCE
LAURENCE D. CHAPIN — TRACY MALLORY
AUSTIN W. CHEEVER — HERMAN A. OSGOOD
RANDALL CLIFFORD — FRANCIS W. PALFREY
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JOHN B. HAWES, 2D. — GEORGE G. SMITH
JOHN S. HODGSON — JOHN B. SWIFT, JR.
FRED S. HOPKINS — WILDER TILESTON
BRYANT D. WETHERELL

The Physiology of Pulmonary Embolism as Disclosed by Quantitative Occlusion of the Pulmonary Artery.

HAGGART, G. E., AND WALKER, A. M. (*Arch. of Surg.*, May, 1923), working in the physiological laboratory of the Harvard Medical School, describe the rather intimate technic of their experimental work and draw the following conclusions:

1. In the method described, it is possible, in the normally breathing animal to produce partial or complete block of the pulmonary artery, the condition as here brought about being analogous to pulmonary embolism in man.

2. Clamping the left branch of the pulmonary artery causes an immediate rise in pulmonary pressure, averaging about 29 per cent., and such a procedure causes no significant change in the general systemic pressure nor any significant variation in size of the heart, heart rate, or heart output. Ventilation, as measured by a spirometer, is, however, increased approximately 25 per cent., a moderate hyperpnea resulting.

3. Following total pulmonary occlusion a severe and immediate reaction sets in. The heart dilates quickly and to a marked degree, the minute volume output becoming materially less. The pulmonary pressure rises sharply—121 to 267 per cent.—and then gradually falls toward zero. The systemic pressure begins to fall immediately and does not recover, while respirations become irregular and shortly thereafter cease altogether.

4. Until from 52 to 66 per cent. of the pulmonary circulation is cut off there is no significant variation in the general circulatory condition of the animal. The point at which failure occurs is sharply defined, since beyond this endpoint a circulatory collapse is precipitated by a minute increase in the arterial obstruction, but if this is not applied no untoward change results. [E. H. R.]

Artificial Nerve Branches for Innervation of Paralyzed Muscles.

STOOKEY, B. (*Arch. of Surg.*, May, 1923) presents the results largely of animal experimentation and draws the following conclusions:

1. When muscular branches are destroyed and nerve suture is impossible, paralyzed muscle may be innervated by the formation of an artificial nerve branch.

2. When a free nerve transplant is sutured to the nerve trunk and the distal end implanted directly into the muscle, the free nerve transplant serves as a conduction path from the nerve trunk to the muscle.

3. An artificial nerve branch may be made for a muscle from a nerve trunk which normally supplies the muscle; or, if this nerve trunk is totally destroyed, a branch may be made from an adjacent nerve. Thus a muscle may be brought under the domain of a nerve which never supplies it normally; for example, the biceps may be supplied by an artificial branch from the musculocutaneous, or, if the musculocutaneous is destroyed, it may be innervated by an artificial branch from the ulnar or median nerve.

4. Evidence that paralyzed muscles may be neurotized by an artificial nerve branch was shown by electric stimulation of the artificial nerve branch, resulting in a rapid and quick contraction of the muscle, by the normal size and color of the muscle, and by the histologic findings, which revealed normal striations in the muscle fibers. The presence of nerve branches and nerve fibers in the muscle thus innervated is conclusive evidence that neurotization has taken place. [E. H. R.]

Cystic Disease of the Bones.—A Study of Fifteen Cases.

ASHHURST, A. P. C., ET ALS. (*Arch. of Surg.*, May, 1923) present a very thorough article of 69 pages profusely illustrated with half-tone x-ray plates and photographs of patients and outline drawings of operative procedures with end results. A detailed report of cases is included and some very remarkable end-results are shown. Several cases of extreme deformity of the lower extremities with almost complete bowing of the tibia, fibula, and also the femur, were vastly improved by operation. The article is largely confined to description of cases and deals only briefly with the etiology and pathology of the condition. [E. H. R.]

Preservation of the Facial Nerve in the Radical Treatment of Parotid Tumors.

ADSON, A. W., AND OTT, W. O., (*Arch. of Surg.*, May, 1923) present a short article with excellent illustrations describing their technic in this operative procedure. The illustrations are often more instructive than the text, and the reader is referred to this article for details. [E. H. R.]

A Method of Determining the Question of Drainage in Intra-Abdominal Infection.

WILENSKY, A. O., AND BERG, B. N., (*Annals of Surgery*, May, 1923) have taken smears from the surface of the appendix and surrounding peritoneum, subjected it to immediate microscopic examination, and believe they have been able to determine the degree of infection from the number of bacteria present; and they also believe that this can be safely used as a

guide for the institution or non-institution of drainage. Their comment and conclusions are as follows:

A preliminary report is made concerning the utilization of the direct smear as a practical criterion in deciding the question of drainage after operations for intra-abdominal infections (appendicitis with and without peritonitis).

The bacteriological content of smears carefully made at the time of operation may be used as a rough estimate of the degree of infection of the peritoneal cavity. Up to the present time the studies have shown that when such smears show an absence, or only the occasional presence (one organism in five or more high-power microscopic fields) of organisms, cases of intra-abdominal infection (cases of appendicitis in this series) can be closed without drainage after operation without untoward postoperative complication. The statement holds true in the absence of any other surgical contraindication to drainage, such as hemorrhage or oozing surface.

Cultures made at the same time as the smears may show a growth even when no organisms are visible in the smear. In such cases the number of organisms present is undoubtedly small and the nature of our results indicates that in the cases studied the peritoneum and natural defense mechanism of the body are ample to take care of the contamination. This does not take into account the virulence of the individual organisms.

The studies will be continued and a further report will be made as to the upper limit of the number of organisms per microscopic field compatible with a safe primary closure. [E. H. R.]

Transposition of the Rectus Muscle and the Utilization of the External Oblique Aponeurosis in the Radical Cure of Inguinal Hernia.

Schiley, W. S. (*Annals of Surgery*, May, 1923) presents a very well illustrated article on this technic. Eighty-seven cases done by this method have been followed up. Of 22 direct hernias, none have recurred. Two recurrences followed in cases of indirect hernia operated by Bassini muscle repair with aponeurotic overflap. Both cases had extensive postoperative wound infection. The operation is deserving of attention. [E. H. R.]

Analysis of My End-Results in Thyroid Surgery.

Porter, C. A. (*Surg., Gyn., and Obstet.*, May, 1923), analyzing over 250 personal cases, has had only one death, occurring in a woman of 67 with a very large goiter of forty years' duration. She died of pneumonia and hemorrhagic nephritis three days later. He speaks of the importance of examining the larynx directly before and after operation in order to determine the possibility of paralysis due to nerve injury or pressure on the laryngeal nerves. He analyzes results in nineteen cases of malignant disease of the thyroid, and presents one extensive case of carcinoma of the thyroid which had metastases to the chest, two operations, x-ray treatment, with recovery lasting over two years. He believes that there is no doubt but that x-ray exerts a remarkable influence upon recurrence and metastases.

He analyzes his cases and groups them as unimproved, improved but not cured, cured with mental symptoms, cured with cardiac symptoms, and those that are entirely cured, and states in conclusion that: (1) he believes that x-rays, through the action on the thyroid and possibly on the thymus, will diminish the risk of operation and will permanently cure certain cases of Graves' disease. On the other hand, he has seen cases in which x-ray treatment, though persisted in for as long as two years, has had practically no effect. Surgery promptly cured. (2) If six months' treatment with x-rays is not efficient, operation is indicated. (3) The best index of a cure of Graves' disease is a permanent reduction of the basal metabolism to normal. (4) Whether the patient will be cured or not depends on the stage of the disease at which treatment is instituted and the degree of irreparable damage which has already resulted. (5) Though ligation and hemithyroidectomy may cure many patients, ultimate subtotal thyroidectomy most quickly and permanently reduces the metabolism to normal. (6) The psychoses of this most interesting disease, which seems frequently to occur in neurasthenic individuals, requires long after-treatment.

[E. H. R.]

A Method for the Localization of Brain Tumors in Comatose Patients.

Dandy, W. E. (*Surg., Gyn. and Obstet.*, May, 1923) presents a method for the determination of the communication between the cerebral ventricles and the estimation of their position and size without the injection of air. This is done by means of a puncture with a long needle connected with an aspirating syringe and the injection of indigocarmin. The article is adequately illustrated, showing the technic. Precautions are given, and the dangers and advantages discussed, with possibilities of error from ventricular estimation. The author then presents a summary of arguments for and against this method.

[E. H. R.]

Cranial and Intracranial Endotheliomata—Hemicraniosis.

Penfield, W. G. (*Surg., Gyn. and Obstet.*, May, 1923) presents a well illustrated article describing several interesting cases, and gives the histology of the condition and a summary as follows:

There is a group of dural endotheliomata which give evidence of their presence and position by a typical, slowly growing, hard prominence on the cranium. The nature of these neoplasms has not been generally understood. They have been called hemicranioses by some authors, in the belief that they were hypertrophies invariably situated in the cutaneous distribution of the first division of the trigeminal nerve. The cranial boss has been frequently considered to be a simple exostosis.

The microscopic picture of these tumors is that of the so-called endothelioma of the dura, their nuclei being frequently arranged in whorls or palisades. They appear to arise from the arachnoidea or inner layer of the dura mater, displacing without infiltrating brain. They pass through the dura in a number of places, enter the overlying bone, and cause a complete rearrangement of the osseous structure. The bone-forming elements are caused to lay down bone in the substance of the neoplasm. This osteogenetic activity is greatest in a pad of endothelioma that comes to lie between skull and scalp, with the result that an osseous tumor forms on the external surface of the cranium, and may become very large and hard. The temporal muscle and scalp may be infiltrated with the neoplasm.

Four hundred and twenty histories of cases, in which the diagnosis of brain tumor has been proven at operation or autopsy, were studied and of these tumors, 11 were found to be associated with a lump on the cranial vault. In one of these 11 cases the lump was soft and could be pressed inward through the skull. This proved to be a sarcoma and could not have been confused clinically with the remaining 10 cases, in all of which the lump was quite evidently a bony prominence of the skull. All of these 10 cases presented the same pathological picture and similar clinical histories.

Operative removal, in cases where the patient survived the immediate effects, has resulted in cures.

In most instances, it should be possible to make the diagnosis before the onset of distressing cerebral symptoms. The characteristic cranial prominence increasing over a considerable period, associated with pain of a stabbing character beneath the tumor, is pathognomonic of the condition.

Whatever may be the etiology of these tumors, the cranial prominence is secondary to invasion of the skull by the intracranial tumor. It is incorrect to suppose that the cranial and intracranial tumors are of entirely different nature. They are the same except that the growth of the former is accompanied by bone formation. It is evident, therefore, that the following hypotheses are incorrect: (1) That a primary thickening of the skull irritates the dura and thus causes the appearance of an intracranial endothelioma, or (2) that some irritation causes the dura to lay down neoplasm on one side and exostosis on the other. It is usually impossible to elicit a history of trauma, and yet the much greater incidence of this type of endothelioma among men than women suggests that trauma may be in some way an etiological factor. [E. H. R.]

Autotransfusion.

Burch, L. E. (*Surg., Gyn. and Obstet.*, June, 1923) presents an interesting case of autotransfusion in a man in whom a very difficult and bloody splenectomy was done. The blood was collected by sopping it up with salt solution sponges and then injected into a vein.

He briefly reviews the literature, which is largely German in origin, and concludes that autotransfusion is a safe procedure, although in a limited number of cases reactions will occur. Sodium citrate is not essential. Normal salt solution will make an admirable substitute and, if neither of these is at hand, the pure blood may be reinjected. Extra-uterine pregnancy will offer the largest field of usefulness for this procedure, but in wounds of the spleen, liver, wounds of the lung producing a hemothorax, and in operations where a large amount of blood is unavoidably lost, it will not only save life, but will hasten postoperative recovery. Contaminated blood should not be thrown away, but should be given as a rectal drip. Autotransfusion may occasionally be used to advantage in certain obstetrical complications, such as placenta praevia, rupture of the uterus, and Cesarean section. [E. H. R.]

Tubal Twins and Tubal Pregnancy.

Arey, L. B. (*Surg., Gyn., and Obstet.*, June, 1923) writes as follows:

Tubal pregnancy (single and twin) tends to occur in women who are older by four and one-half years (31.0 years) than the average age for motherhood (26.5). These women fall into two groups: (1) Three-fourths are already mothers (but without recent pregnancies) and nearly one-half are multipara; previous abortions are common. (2) One-fourth have been married a relatively long period without becoming pregnant. The sterile period since marriage or the last pregnancy averages nearly six years.

The best data available indicate that rupture occurs in 58 per cent. of all cases of single tubal pregnancy. The greatest frequency of rupture, and hence peril to the mother, is in tubes with normal embryos (70 per cent. rupture), less in those with pathological embryos (50 per cent. rupture), and least in tubes which contain degenerating ova without embryos (40 per cent. rupture).

Eighty per cent. of the recorded specimens of monochorial tubal twins had ruptured, but this figure is surely too high, because unruptured specimens with degenerated embryos of necessity remain unrecognized. There is nothing to indicate that monochorial twins by their bulk alone induce more certain rupture.

The average time of rupture in single tubal pregnancy is at 7.7 weeks. The corresponding figure for tubal twin pregnancy is 10.9 weeks. It is probable that the unusual feature of twinning leads to a more representative collection of the older specimens than in single gestations; hence the later date in the twin group is not really significant.

The average age of normal, single, tubal embryos at the time of operation is 8.0 weeks. In the tubal series the mean age of the monochorial specimens is 11.6 weeks.

Tubal embryos that cease development may remain unabsorbed for long periods. On the contrary, most disappear rapidly, first the embryo, then its sac. For this reason tubes that are still small at the usual time of operation contain, at best, pathological embryos. It is only in small tubes with early histories that the most desirable young stages will eventually be found.

One-fourth of the tubal twin specimens have histories that indicate that at least one menstrual period occurred after pregnancy began. [E. H. R.]

Longitudinal Overgrowth of Long Bones.

Speed, K. (*Surg., Gyn. and Obstet.*, June, 1923) says that overgrowth of long bones is a definite pathological entity, oftentimes following infections of these bones, but the infection does not necessarily involve the epiphyseal areas. It may, however, follow epiphyseal displacements, even of slight degree. This is rather a rare phase of this subject and one which has been given very little attention in the past. [E. H. R.]

A Study of Diverticulum Formation in the Appendix.

Stout, A. P. (*Arch. of Surg.*, May, 1923) presents an article of 36 pages devoted to a discussion of the pathology and etiology of this rather rarely recognized condition. [E. H. R.]

Spleen Puncture in Malaria.

Knowles, Acton and Gupta (*Ind. Med. Gazette*, May, 1923) report results of spleen punctures in fifteen cases of malaria with enlarged and hard spleens. The cases include benign tertian and quartan, and malignant tertian infections. The writers find that spleen puncture, although the readiest method of diagnosis in kala-agar, is of little diagnostic value in malaria. Their films, however, do show many parasite forms lying free in the plasma and undergoing degeneration. The spleen appears to function as the great site of destruction of parasites, but not as their reservoir; mutiplication by schizogony appears to be restricted to the interior of the erythrocytes, either in the peripheral or in the internal circulation. The rate of destruction of parasites, even in untreated cases, is tremendous. The writers believe that the etiology of malarial relapses is best explained on a purely mathematical basis. If the patient's powers of resistance are such that 98 per cent. of the plasmodia are destroyed per 48-hour cycle, permanent cure is practically assured. If the destruction rate is lower, say 90 per cent. to 94 per cent., the disease is still in its progressive phase. At a figure between 95 per cent. and 96 per cent. a condition of balanced equilibrium is reached at which schizogony is still proceeding at the normal rate, but the patient's powers of resistance are sufficient to keep the total number of trophozoites below the febrile threshold. Should the patient's powers of destruction of merozoites become reduced from any cause, however, the destruction rate will fall, the schizogony success rate will be proportionately greater, a febrile dose of merozoites results, and relapse occurs. [L. D. C.]

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THE POSSIBILITY OF EXTENDING HUMAN LIFE.

THE above was the title of an address delivered before the Harvey Society of New York, at the New York Academy of Medicine, December 16, 1922, by Louis I. Dublin, Ph.D., statistician of the Metropolitan Life Insurance Company.

After carefully analyzing the present life expectancy for various age groups, Dr. Dublin spoke of the possibilities of the future. The most important single item of mortality is the record for the first year of life, for 15 per cent. of all the deaths that occur each year are of children within the first year of life. The high infant mortality, however, is compensated for by its relative ease of prevention and control. In 1921 in the Birth Registration Area of the United States, the infant mortality dropped to 76 per 1000 births. In New Zealand, in 1920, it was below 50 per 1000 births for the entire country, and in many cities of the United States it is at the present time below 40. Dr. Dublin feels that with the detection and handling of maternal syphilis, the control of the toxemias of pregnancy and good obstetrical care this mortality can be reduced to one-third of the 1910 rate. Mortality of the later years of childhood can be reduced by control of typhoid fever, diarrhea and enteritis, measles, scarlet fever, whooping cough and diphtheria, and tuberculosis and the respiratory diseases.

The great reduction in the death rate from tuberculosis already experienced holds promise of further benefit for the age group from 10 to 60. The death rates from the so-called degenerative diseases—heart disease, Bright's disease, cerebral hemorrhage, and the like—have not declined. The development of a well-conceived campaign against these diseases along the lines that have proved successful against tuberculosis should yield creditable results. "It is reasonable to expect," he adds, "that an appreciable part of the 50 per cent. mortality reduction postulated by our hypothetical life table will be accomplished through these means." Occupational accidents will be reduced through the ever-growing interest of employers in safety measures and in shop sanitation.

No substantial gains are at present in sight in life saving in old age, that is, from 70 onward.

PUBLICITY AS APPLIED TO MEDICINE.

THERE is a growing sentiment favoring the dissemination of knowledge relating to medicine, both preventive and curative.

This purpose has found expression in Indiana and Illinois. In the first-mentioned state the State Society has entered upon a campaign to educate the public concerning the aims and objects of the medical profession, and in Illinois every member of the State Society is being solicited for a contribution to a fund for carrying on a lay educational campaign through the newspapers of the state. The American Medical Association is endeavoring to reach the public through *Hygeia.*

In Boston this matter has been seriously considered and courses of popular lectures have been given to which the public has been invited.

We are fortunate in having two influential daily newspapers, the *Transcript* and the *Herald,* which make especial efforts to report the advances in medicine and publish accounts of important medical activities. The laity should recognize the great service rendered by the press in dealing with the vital affairs of human experience, for although reference to the cure and prevention of disease has a certain news value, the quality of the publicity given to health matters by our daily papers shows a true altruistic purpose.

Several members of the Massachusetts Medical Society feel that there are many gaps to be filled, for there are reasons for more or less regular instruction, because it is not enough to

point out, even in a dramatic way, the physical and mental dangers to which we are exposed and the resources of remedial medicine as news covering a particular menace or cure, but that, since the population is constantly changing, information concerning health must be furnished, just as the public school takes on the new child as soon as it has reached the proper age.

It is true that our State Department of Public Health and the Boards of Health and the various special societies are disseminating literature, but these activities do not cover the whole field. A public servant is necessarily restricted to some extent in the broad field of propaganda, by political reasons. It would be unwise for a board of health to explain the fallacies of the cults or to touch on questions of personal behavior along lines outside of the domain of public health, but the medical profession, in accordance with the established intimacy of physician and patient, might well speak with authority.

If a medical society should enter upon a campaign of instruction, the details should be in the control of the wisest minds. The least indiscretion, or even over-enthusiasm, might be productive of harm rather than good, for there are active enemies carefully seeking opportunity for destructive criticism, as well as many others who, although not so actively hostile, do not comprehend the inestimable value of scientific medicine, and nurture a suspicion which is born of the inevitable disappointments of life.

The Society should carefully consider its responsibility as a privileged class, with its opportunity for great service, outside of personal contact, in educating the masses and moulding public opinion.

THE IMPORTANCE OF COLOSTRUM.

Theobald Smith, Howe, Little, and Orcutt, by various experiments, have shown that colostrum is of definite value to calves as a carrier of englobulin, with which immune bodies are closely allied. Calves that have been totally deprived of colostrum are lacking in serum content of immune bodies essential to their well being. These bodies have been found not to be transmitted through the placental circulation of goats and cows, as the placentas of these animals have a three-cell lining that is impervious to the transmission of proteins.

Kuttner and Ratner in the *American Journal of Diseases of Children*, Vol. 25, p. 413, have shown that in rodents and man, with a relatively simple placental structure, placental transmission of immune substances is possible. In accordance with the results of previous workers, they have found that the human placenta is permeable to diphtheria antitoxin. Comparative Schick reactions on mothers and infants show that the negative reaction is always mutual, although positive mothers may have infants with negative reactions. This, however, probably depends on the technical difficulties attendant on performing the Schick test on infants; in these cases the cord blood is found to be deficient in antitoxin.

Human colostrum occasionally contains small amounts of antitoxin, but this amount is always less per volume than that found in the blood serum of the mother or in the cord blood. Transitional milk and milk never showed the presence of antitoxin. They conclude that there is no evidence of any possible harm to the infant due to the omission of colostrum.

DETERMINATION OF CARBON MONOXIDE IN BLOOD.

R. R. Sayers, W. P. Yant, and G. W. Jones in Serial No. 2486, Reports of Investigations of the Department of the Interior, Bureau of Mines, describe a new pyrotannic acid method for the quantitative determination of carbon monoxide in blood and air. The first should be of interest to physicians, owing to the increase in carbon monoxide poisoning and the importance of early diagnosis for correct treatment as well as for medico-legal reasons.

A small and convenient apparatus has been devised by the writers that gives an accurate result within a few minutes, and without the necessity of special training. The method is based on the fact that a light brownish-gray suspension is formed after a few minutes when normal blood diluted with water is treated with a solution of tannic and pyrogallic acids. Light carmine suspension is formed in blood having CO in combination with all of the hemoglobin; in partial combinations the suspension formed will be a corresponding mixture of the two extremes of color. With the former technique standards were prepared from blood, but as these were not permanent the authors have developed standards prepared from pigments.

The apparatus consists of:

A. Set of permanent standards made to match the color of blood having varying amounts of CO Hb, arranged in a rack with spaces for interposing tubes of similar size containing specimens of blood for analysis.

B. Small test tubes (of the same size and plan as those used for standards) for preparing the specimens of blood.

C. A dilution pipette for measuring blood. The long capillary stem is calibrated to a 0.10 c.c. mark, and the total pipette has a volume of 2.00 c.c. This permits the dilution of a 0.10 c.c. sample of blood with water to 200 c.c., or a ratio of 1 in 20.

D. A spring hemospast for making small puncture wounds from which the blood is obtained.

E. Rubber hose for wrapping the subject's finger during the taking of the blood sample.

F. Tannic-pyrogallic-acid mixture (0.04 gram of a 1:1 mixture) for producing the colored suspension in the diluted specimen of blood.

G. Small bottle of water for diluting the blood.

All of the above apparatus is arranged in a compact pocket case, 3 by 7 by 1¼ inches.

The technique of drawing and diluting the blood is similar to that of a blood count or Sahli hemoglobin determination. To the blood solution the contents of a capsule of the tannic and pyrogallic acid are added, and the tube is inverted to insure thorough mixing. After standing for fifteen minutes at room temperature it is compared with the standards and the percentage of carbon monoxide hemoglobin estimated from the value of the standard which it most nearly matches.

Miscellany.

HAMPSHIRE DISTRICT MEDICAL SOCIETY.

THE regular meeting was held at Boyden's Restaurant, Northampton, on July 11, 1923, at 4.30 P.M., Dr. George W. Rawson of Amherst, Vice-President, in the chair. Dr. Enos H. Bigelow of Framingham, recently elected President of the Massachusetts Medical Society, was present and talked to the Fellows on matters relative to the continued success of the Society. His remarks were greeted with approval by all present. It was voted that the sense of the meeting was in favor of having the annual banquet of the State Society in the middle of the day, instead of at night.

Dr. F. H. Smith read a well-prepared paper on "Nephritis," which was well received.

Dinner was served at 6 P.M.

The Franklin and Hampshire District Medical Societies will hold a joint meeting in South Deerfield in September, at the Hotel Lathrop, Dr. H. W. van Allen of Springfield being the speaker of the day. A ball game, polo match, and a tug-of-war are being considered by the committee in charge, to entertain the Fellows.

Dr. H. B. Perry, F.A.C.S., Northampton, and Mrs. Marybelle Minetree, formerly of Greensboro, North Carolina, were recently married by Rev. Henry G. Smith, pastor of the Unitarian Church, Northampton. After a short honeymoon, Dr. and Mrs. Perry will live in Pelham.

A daughter, Margaret, was born to Dr. and Mrs. J. D. Collins, Northampton, at Phillips House, Massachusetts General Hospital, Boston, recently.

Dr. and Mrs. J. E. Hayes, Northampton, are spending a month at Wareham, on Cape Cod.

Dr. Francis E. O'Brien, superintendent of the Hampshire County Sanitarium, was married to Miss Ethel May Riley of New York City, on July 5, 1923, at St. Patrick's Cathedral. After an extended wedding trip, Dr. and Mrs. O'Brien will be at home after the first of September.

AN APPEAL FOR INFORMATION ON MATERNAL WELFARE.

The Committee on Maternal Welfare of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons is anxious to procure accurate information as to the progress which each state is making in the matter of maternal welfare, in order to formulate a report for our annual meeting in Philadelphia, in September.

A preliminary program was published in the issue of the *American Journal of Obstetrics and Gynecology* for June, 1923, which it is hoped may be a suggestion of an outline for national work among all organizations which have a common basic line of endeavor, including medical societies, departments of health, and commissions of social workers.

We shall be under many obligations if you will be kind enough to send at your early convenience a brief synopsis of the results accomplished in your state, and most important, if possible, a contrast of the record of the clinics or regions where patients have been privileged to have pre-natal care, with the statistics of the community in general where no supervision has been afforded the prospective mothers.

These it is planned to have incorporated into the completed survey to be presented to the Association and to be published in the Annual Transactions later on.

DR. GEORGE W. KOSMAK,
New York City,
DR. HENRY SCHWARZ,
St. Louis,
DR. GEORGE CLARK MOSHER,
Chairman, Kansas City.

YALE CONFERS DEGREE ON DR. CANNON.

In presenting candidates for honorary degrees at Yale University, Professor William Lyon Phelps said of Dr. Cannon, on whom the doctorate of science was conferred:

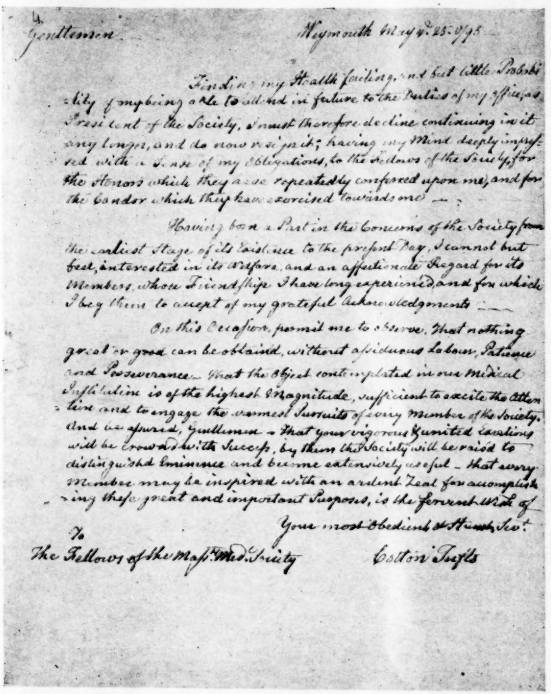
Walter Bradford Cannon: Physiologist. Dr. Cannon was born in Wisconsin, is a graduate of Harvard and professor of physiology. He is a Fellow of many scientific societies at home and abroad. His war services were conspicuous. He

was President of the Medical Research Society of the American Red Cross in France in 1917-18, and lieutenant-colonel of the Medical Corps. He was decorated Companion of the Bath, British, in 1919. As an investigator he is in the front rank of American physiologists. His work on organic conditions as affected by emotion is profoundly original, and on it is based the diagnostic method which is now employed. When he was a medical student in 1896, he used the x-ray while studying the processes of digestion. He observed that anxiety, worry and anger were immediately registered by the stoppage of motions in the alimentary tract. He became a specialist in the relation of emotional excitement to bodily disorders, and has since given us scientific reasons for not worrying and for remaining cool under provocation. For nearly two years, 1917-1919, Dr. Cannon was working in France on the results of shock, and in the perfecting of the proper treatment. He is a scholar and a benefactor of mankind.—*Science.*

LETTER OF RESIGNATION OF COTTON TUFTS AS PRESIDENT OF THE MASSACHUSETTS MEDICAL SOCIETY.

This reproduction of Cotton Tufts' letter of resignation, from the collection of old documents in the Bowditch Book at the Medical Library, is one of the illustrations for the History of the Massachusetts Medical Society, now in the hands of the printer.

Dr. Tufts, who lived in Weymouth, twelve miles from Boston, missed attendance at only two of the forty meetings of the Council of the Society during the thirteen years he held office. He was an incorporator in 1781, the second vice-president (1785-1787), and fourth president (1787-1795). He it was who planned for a state medical society as early as 1765, the year he wrote spirited instructions to the representatives of his town against the Stamp Act. In 1784 he was a member of the Massachusetts Senate. A cut of the oil painting of Dr. Tufts in the Fifield Room, at the Library, is another illustration for the book.



Gentlemen Weymouth May 4. 25. 1795

Finding my Health failing, and but little Probability of my being able to attend in future to the Duties of my Office, as President of the Society, I must therefore decline continuing in it any longer, and do now resign it; having my Mind deeply impressed with a Sense of my Obligations, to the Fellows of the Society, for the Honors which they have repeatedly conferred upon me, and for the Candor which they have exercised towards me —

Having been a Part in the Concerns of the Society from the earliest Stage of its Existence to the present Day, I cannot but feel, interested in its welfare, and an affectionate Regard for its Members, whose Friendship I have long experienced and for which I beg them to accept of my grateful Acknowledgments —

On this Occasion, permit me to observe, That nothing great or good can be obtained, without assiduous Labour, Patience and Perseverance — That the Object contemplated in our Medical Institution is of the highest Magnitude, sufficient to excite the attention and to engage the warmest Pursuits of every Member of the Society, and be assured, Gentlemen — That your vigorous & united exertions will be crowned with Success, by them the Society will be raised to distinguished Eminence and become extensively useful — that every Member may be inspired with an ardent Zeal for accomplishing these great and important Purposes, is the fervent Wish of

Your most Obedient & Humble Servt

To

The Fellows of the Mass.ts Med. Society Cotton Tufts

NOTES FROM THE BOSTON MEDICAL LIBRARY.

The Library has received a very interesting large album of photographs of lepers. It originally belonged to Sir George Turner, M.D., who contracted leprosy in his work among the lepers of Pretoria, Transvaal, South Africa. Attached is a long letter from Dr. Turner regarding his own case.

The treasurer has been notified of two legacies of $2500 each from the estates of the Misses Abby M. and Mary G. Storer, left in memory of their father, D. Humphreys Storer. Legacies and gifts are always welcome as the Library can at all times make use of additional funds for administrative as well as for library purposes.

RECENT NOTABLE ACCESSIONS.

Bing, R. Gehirn und Auge. 2 ed. rev. enl. 4°. Mün. 1923. An interesting authoritative monograph on the physio-pathological relations of the eye and brain.

Birnbaum, K. Der Aufbau der Psychose. 8°. Berl. 1923.

Brugsch, T., and Schittenhelm, A. Lehrbuch klinischer Diagnostik und Untersuchungsmethodik. 6 ed. 8°. Berl. 1923. A reprint of the fifth edition of the standard German work on diagnosis.

Chalatow, S. S. Die anisotrope Verfettung im Lichte der Pathologie des Stoffwechsels. 4°. Jena, 1922. A comprehensive monograph on the so-called cholesterin-diathesis. From the Institute for Pathological Anatomy in Petrograd.

Cotoni, L., Truehe, C., and Raphael, A. Pneumocoques et affections pneumococciques. Fourteen pages of bibliography. 8°. Par. 1922.

Hilgermann, R., and Lossen, J. Diagnostik der Infektionskrankheiten. Jena. 1923. A well-written treatise on the bacteriological, seriological, cytological and chemical diagnosis of the infectious diseases.

Hope, E. W., Hanna, W., and Stallybrass, C. O. Industrial hygiene and medicine. 8°. Lond. 1923. Based principally upon British experience.

Klimmer, M. Technik und Methodik der Bakteriologie und Serologie. 8°. Berl. 1923. An up-to-date manual with a good index.

Lagrange, F. Du glaucome et de l'hypotonie. 4°. Par. 1922. An important treatise, with particular reference to the surgical treatment of glaucoma, by Prof. Lagrange of Bordeaux.

Madelung, O. W. Die Chirurgie des Abdominaltyphys. Teil 1. 4°. Stut. 1923. Comprehensive treatise on the complications of typhoid fever. This part contains interesting chapters on the changes in the bones, joints and skin, and the intestinal and appendical complications. Extensive bibliographies.

Moodie, R. L. The antiquity of disease. 12°. Chic. [c1923]. An interesting, simple, presentation of the known facts in the field of paleopathology.

Nichols, H. J. Carriers in infectious diseases. 8°. Balt. 1922. A systematic exposition of current medical theory and practice as relates to carriers, supplementing the work of Simon and Ledingham and Arkwright.

Phiaalix, M. Animaux venimeus et venins. 2v. 4°. Par. 1922. A very complete and well-arranged work on the animal poisons as well as the serpent venoms. Much of the material is of an unusual and interesting nature. Special chapters deal with the toxicology, pathology and physiology of the venoms of the protozoa, coelenterata, echinoderma, worms and crustaceans, insects (including the arachnidia and myriapoda), molluses, fish, batrachians, lizards and serpents. Extensive bibliographies are appended to each chapter. A valuable reference work.

Ponndorf, W. Die Heilung der Tuberkulose und ihrer Mischinfektionen...durch Kutanimfung. 2 ed. rev. enl. 8°. Lpz. 1923. Based upon a large clinical experience.

Poynter, C. W. M. Congenital anomalies of the arteries and veins of the human body with bibliography. 8°. Lincoln. Neb. 1923. With 56 pages of bibliography.

Ribberts Lehrbuch der allgemeinen Pathologie und der pathologischen Anatomie. Herausgegeben von J. G. Mönckeberg. 9 ed. 8°. Lpz. 1923. A new edition of a standard German work, edited and revised by Prof. Mönckeberg of Bonn.

AMERICAN FRIENDS SERVICE COMMITTEE.

The following incident, described from life by a member of the Quaker Mission, illustrates the tragic need for quinine in the Russian famine zone. The American Medical Aid for Russia (Medical Section of the American Friends Service Committee (Quakers)), 20 S. 12th Street, Philadelphia, Pa., is soliciting funds and drugs with which to meet this need. Drugs and instruments should be addressed to the Storeroom of the above organization, 1521 Cherry Street, Philadelphia, Pa.

MATVEY'S REWARD.

"Dear Dorothy:

This lad found the horse this morning, and asks for a gift. His demand—or request—is most modest. Only quinine for a little sick sister seven years old who cannot be brought in for treatment at the malaria clinic because they have no horse.

K. H. A."

He brought this note in to Dorothy Detzer's office this morning, a shy lad of about fifteen summers, in a faded, many-patched red shirt and homespun breeches, barefooted, with yellow

hair and blue eyes, and a face still wearing the familiar pinched look of last year's famine.

The evening before some of the mission members who were travelling in a telegea had unhitched their horse and tied him to the wagon, and gone to sleep in a haystack. In the morning the horse was gone. They came back to Sorochinskoye to raise the alarm, notified the soviet, the police, the militia, and men on horseback went off in all directions to look for the horse.

"What's your name, *maltchick?*" we ask him.

"Matvey Tekutov," and he stands there awkwardly fingering his cap.

"And how did you happen to find the horse, Matvey?"

"I started to walk from Voznesenskaya early this morning to get some quinine for my little sister. I had come twenty versts, and just after I passed Tolkaiovka I saw this horse on the steppe. So I caught him and rode him in the rest of the way.

"And did you know whose horse it was?"

"How could I know whose horse it was? Only when I got here I asked where the Quakers were, because we knew they were good people who had brought us food, and we had heard they would give us quinine too. So they told me the Quakers lived in the big yellow house by the Garden of Freedom. I went there, and there they said it was the Quaker horse they had lost this morning that I was riding."

"And the little sister—is she very sick?"

"Yes—before she was sick some days and well others. But now she is always sick, and lies down all the time—she is so weak and so white. And Babushka is sick, too, with malaria. In Voznesenskaya someone is sick in every family."

We explain to Matvey that at present we can only give quinine from the clinic in Sorochinskoye to people who could come themselves and have their blood tested—but at the look of despair on his face we hasten to add that in his case we will make an exception because he has come so far, and brought us the horse, and to tell him that we hope soon to open a clinic in Voznesenskaya, too, so that his little sister could take treatment every day and grow quite well again. He takes the little note we hand him and starts hurriedly off for the clinic.

"But wait, Matvey, isn't there something we can do for *you* for bringing back the horse?"

"Dla cebye, nietchev o ne nado—tolke davaitye quinine!" "For myself, I need nothing—only give me the quinine!"—and we cannot make him say what he needs most for himself. Nevertheless, he goes off very happily when we give him not only a note to the clinic to receive quinine, but a note to the warehouse to receive a dress for the little sister, and a pair of shoes and a shirt for himself.

THE ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH.

The Board of Scientific Directors of the Rockefeller Institute for Medical Research announces the following promotions and appointments:

Dr. Oswald T. Avery, Dr. Walter A. Jacobs, Dr. Michael Heidelberger, Dr. Christen Lundsgaard, Dr. Peter K. Olitsky, and Dr. Louise Pearce, hitherto associates, have been made associate members. Dr. David I. Hitchcock, Dr. Frederic M. Nicholson, Dr. Henry S. Simms, and Dr. Leslie T. Webster, hitherto assistants, have been made associates. Dr. Mimosa H. Pfaltz, hitherto a Fellow, has been made an assistant.

The following new appointments are announced:

Associate Members.—Dr. Jacob J. Bronfenbrenner, Dr. Paul A. Lewis.

Associates.—Dr. Oscar Baudisch, Mr. Herbert L. J. Haller, Dr. Stuart Mudd.

Assistants.—Mr. Arnold M. Collins, Dr. John H. Crawford, Dr. Robert Elman, Dr. Joseph H. B. Grant, Mr. Moses Kunitz, Dr. Cecil D. Murray, Dr. Everett S. Sanderson, Dr. David T. Smith, Mr. James Vander Scheer, Dr. Lars A. Welo.

Fellows.—Miss Gladys Bryant, Dr. Chas. Korb, Miss Dorothy Loomis, Dr. Elmer L. Straub.

Dr. J. Howard Brown, hitherto an associate in the department of animal pathology, has accepted a position as associate professor of bacteriology with Johns Hopkins Medical School.

Dr. Fred A. Taylor, hitherto an associate in chemistry, has accepted a position as head of the department of bio-chemistry at the William H. Singer Memorial Research Laboratory, Pittsburgh, Pa.—*Science.*

NORTHEASTERN UNIVERSITY.

Governor Cox has signed a bill to authorize the trustees of Northeastern University of the Boston Young Men's Christian Association, "to confer such degrees as are usually conferred by colleges and universities in this Commonwealth, except medical and dental degrees and degrees of bachelor of science and bachelor of arts, and to grant diplomas therefor."—*Science.*

W. J. MAYO TO RECEIVE DEGREES.

Dr. W. J. Mayo, of the Mayo Clinic, Rochester, Minnesota, who had conferred on him the honorary doctorate of laws at the recent commencement of McGill University, has sailed for Europe, where the degree of master of surgery will be conferred on him by Trinity College, the University of Dublin, and the degree of doctor of science by the University of Leeds. Dr. Mayo will present a paper on July 17 before the International Surgical Congress.—*Science.*

DIABETIC COLUMN.

INSTRUCTIONS FOR GIVING INSULIN SUBCUTANEOUSLY.

IN USE AT NEW ENGLAND DEACONESS HOSPITAL.

1. *Sterilizing.*—Wash the hands thoroughly with soap and water.

Wrap the cylinder and the piston of the syringe separately in a piece of cloth and cover them and the wired needle with cold water in a dish, heat to boiling and let boil for three minutes. Pour off the water, being careful not to touch anything in the dish, and allow to cool by standing.

Paint the top of the insulin bottle with medicated alcohol.

2. *Loading.*—Draw out the piston so that the syringe contains a little more air than the amount of insulin needed.

Push the needle cautiously but firmly through the rubber cap until the point is just seen, invert the bottle; force the air from the syringe into the bottle and then withdraw as much insulin as is desired. By holding the syringe and needle point upward, air is easily expelled from the syringe before withdrawing it from the bottle.

3. *Injecting.*—The desirable site for injecting insulin is one where the skin is loose. It is well to change the place with every dose. For example, the left thigh on Monday, the right thigh on Tuesday, the left arm on Wednesday, the right arm on Thursday, the left leg on Friday, the right leg on Saturday, and so forth.

Having decided on the site for injection, rub gently an area as large as a walnut with alcohol.

Pick up a fold of the skin between the thumb and forefinger of the left hand, and with the syringe held parallel to the skin, push the needle quickly and firmly into the fold nearly up to the butt. The tip of the needle should then feel loose in the soft tissue between the skin and the muscle.

Force the insulin gradually out of the syringe, while withdrawing the needle slowly, so that the insulin may not all be left in one spot.

Then change hands so that the butt of the needle and the end of the syringe are held in the thumb and first two fingers of the left, and the piston is held by the right hand. Force the insulin gradually out of the syringe, slowly withdrawing the needle so that the insulin may not all be left in one spot.

If the insulin has been given too close to the upper layers of the skin a white blister-like elevation will appear.

Touch the spot lightly with clean cotton until the insulin has been absorbed.

4. *Cleaning Up.*—Rinse the syringe and needle with cold water immediately. Dry the syringe and needle with a cloth and blow air through the needle repeatedly with the syringe. Rub off any irregularities on the point on a fine stone such as a razor hone. A fine wire should always be kept in the needle.

E. P. JOSLIN.

News Items.

AUGUSTUS THORNDIKE, JR., M.D., has been appointed assistant to Einas Key, Stockholm, for a year.

CHANGE OF OFFICE.—Dr. W. S. Boardman, formerly of 63 Mount Vernon Street, has removed to 362 Commonwealth Avenue.

ESSEX NORTH DISTRICT.—Meetings of the Essex North District Medical Society are scheduled for the following dates: October, 1923, a combined meeting with Middlesex North, Middlesex East and Essex South; January 2, 1924, semi-annual meeting at Haverhill; May 7, 1924, annual meeting at Lawrence.

COMMISSIONER OF HEALTH OF CONNECTICUT.—The appointment of Dr. Stanley H. Osborn as Commissioner of Health of the State of Connecticut for a term of six years has been announced by Governor Templeton. Dr. Osborn was formerly epidemiologist of the Massachusetts State Department of Health until 1920, when he resigned to go to Connecticut as Deputy Commissioner of the Connecticut State Department of Health.

INTERNATIONAL CONGRESSES OF PHYSIOLOGY AND PSYCHOLOGY.—The eleventh International Physiological Congress will be held at Edinburgh on July 23-27, under the presidency of Sir Edward Sharpey Schafer. The provisional program of the congress includes a reception by the Lord Provost of Edinburgh and an address by Professor J. J. R. Macleod, of Toronto, on insulin. The seventh International Congress of Psychology will be held at Oxford on July 26-August 2.

APPOINTMENT OF DR. HUGH GRANT ROWELL.—Dr. Rowell has accepted the appointment as Assistant Physician and Lecturer in Physical Education in Teachers' College, Columbia University, New York. He will be associated with Dr. Thomas D. Wood and will begin his service September 15, 1923. His duties will also cover the work of Service Physician to the Horace Mann and Boys' High School. Dr. Rowell has been interested in public health work as Director of Health and Hygiene in Department of Schools of New Bedford, and has contributed several articles to the columns of the BOSTON MEDICAL AND SURGICAL JOURNAL.

WEEK'S DEATH RATE IN BOSTON.—During the week ending July 14, 1923, the number of deaths reported was 164, against 179 last year, with a rate of 11.10. There were 23 deaths under one year of age, against 25 last year. The number of cases of principal reportable diseases were: Diphtheria, 71; scarlet fever, 27; measles, 49; whooping cough, 16; typhoid fever, 1; tuberculosis, 43. Included in the above, were the following cases of non-residents: Diphtheria, 4; scarlet fever, 4; measles, 2; tuberculosis, 2. Total deaths from these diseases were: Diphtheria, 4; scarlet fever, 2; measles, 1; whooping cough, 3; typhoid fever, 1; tuberculosis, 11. Included in the above were the following cases of non-residents: Diphtheria, 2; scarlet fever, 2.

Obituary.

HERMANN M. BIGGS, M.D.

DR. HERMANN M. BIGGS, State Commissioner of Health of New York, who died on June 28, at the age of 63 years, was born in Trumansburg, Tompkins County, New York, September 29, 1859. After graduating from Cornell University and Bellevue Hospital Medical College, he studied at the University of Berlin and the University of Greipwald, Germany. He was the first director of the Carnegie Laboratory, and gave the first systematic teaching in bacteriology in this country. For seven years he served as visiting physician at the Almshouse and Workhouse Hospitals, and at the same time acted as pathologist at Bellevue and consulting physician of the Hospital for Contagious Diseases.

From 1901 to 1914 he was general medical officer of the New York City Department of Health, during which time he also continued his work at Bellevue as Professor of Therapeutics and Clinical Medicine and, later, as Professor of Medicine. The Bulletin of the New York Health Department also tells us that as director of the first municipal bacteriological laboratory in the world, he introduced antitoxin into this country and directed the production of it in New York in 1895. Under his direction the system of tuberculosis clinics, the Otisville Sanatorium, and the Riverside Hospital were established.

In January, 1914, after having three times declined the position, he was appointed State Health Commissioner, the position he occupied at his death.

Dr. Livingston Farrand, President of Cornell University, wrote: "The death of Dr. Hermann M. Biggs is nothing less than a catastrophe. . . . A great figure has passed, and the Red Cross joins in paying tribute to his memory."

FRANCIS WEBSTER GOSS, M.D.

Word has been received of the sudden death in San Francisco recently of Dr. Francis W. Goss, for many years a practitioner on Warren Street, Roxbury, and for thirty-four years the Secretary of the Massachusetts Medical Society. He was a native of Salem, Mass., where he was born July 3, 1842. Therefore he was in his eighty-second year at the time of his death. His parents were Ezekiel and Almira Dwelley Hatch Goss of that city.

Dr. Goss was educated at the Salem Classical and High School, being especially fortunate, as he says, in being under the instruction of Gordon Bartlet (Harvard, 1853), the associate principal, " a gentleman, scholar, and wonderful linguist." After taking his A.B. at Harvard in 1862, Dr. Goss went to Troy, Bradford County, Pennsylvania, where he was principal of the academy for six months. From there he went to the Choules Institute in Newport, Rhode Island. There he succeeded his college chum, Albert E. Davis, as assistant in the school named for Rev. John Overton Choules, eminent Baptist divine and friend of Daniel Webster. For two years and a half he held this position, during the last year beginning the study of medicine under Mr. George Engs, a graduate of Yale in the academic department in 1860 and of the medical department of Columbia in 1863, special attention being given to anatomy and the use of the microscope, then a comparatively new instrument in medicine. Harvard College conferred the degree of A.M. on Dr. Goss the year he began work as a student in Harvard Medical School. From the spring of 1868 to the spring of 1869 he served as medical house officer at the Boston City Hospital, and receiving his M.D. in 1869, settled in practice in Roxbury, having joined the State Medical Society. He married Maria L. Draper of Salem, who died in 1875. Three years later he married Mrs. Helen L. Young of Boston, who died in 1914, leaving him a daughter, with whom he lived in Sacramento, California, where he led a retired life, spending his time in reading and gardening.

Dr. Goss practiced in Roxbury from 1869 until removing to California in 1914. He had been in practice only six years and was thirty-three years old when he was called to the secretaryship of the State Society, bringing to the office an unusual training and ability. Absolutely reliable and dependable in his attention to the varied duties of the position, his record of attendance for the thirty-four years he was in office was extraordinary, for he missed not a single one of the 102 meetings of the Council and 38 meetings of the Society, both regular and adjourned, during all that time. What fidelity to duty! In the years 1912 and 1913 he filled the office of Vice-President of the Society, and from 1896 to 1914 he was a member of the im-

portant standing committee on membership and finance, being chairman for the last eight years of that period. Besides the work done to keep the membership affairs of the Society in proper order he was a careful guardian of the finances. No one who has not been behind the scenes can realize the amount of time and thought that can be spent to advantage on the duties of his office by the chairman of this committee. Dr. Goss did not spare himself. He was uniformly thoughtful of the feelings of others and courteous in bearing to all with whom he came in contact.

FRANCES MORRIS MORRIS, M.D.

Dr. Frances Morris Morris, a pioneer woman physician of Newton and Boston, died at the Newton Hospital July 12, 1923, at the age of 72.

Dr. Morris was born at Trenton, N. J., on June 15, 1851, and as a young woman lived at Providence, later going to South Africa to teach in a Zulu Mission School under the direction of the Woman's Board of Foreign Missions of the Congregational Church. After three years, she contracted African fever, and returned home to regain her health. She then entered the Boston University School of Medicine, and after her graduation in 1885 studied abroad at Vienna. She had kept her office on Beacon Street until a year ago, when she retired because of failing health.

Dr. Morris had maintained an active interest in foreign mission work and had been active in Congregational Church affairs. She is survived by a brother, John Morris, ninety years old.

SUMMARY OF PROVISIONAL BIRTH AND MORTALITY FIGURES: 1922.

The Department of Commerce announces that birth rates for 1922 were lower than for 1921 in every one of the 25 states for which figures for the two years are shown in the following summary. The highest 1922 birth rate (34.4 per 1000 population) is shown for the cities of Wyoming, and the lowest (16.5) for the rural districts of Connecticut.

Death rates for 1922 were slightly higher than for 1921 in 19 of the 27 states shown for both years. The highest 1922 death rate (21.8 per 1,000 population) is shown for the cities of Mississippi and the lowest (7.4) for the rural sections of Montana.

Infant mortality rates for 1922 on the whole balance those of 1921, only 10 of the 25 States showing higher rates in 1922 than in 1921. The highest 1922 infant mortality rate (105) appears for the cities of South Carolina and the lowest (55) for the rural districts of Nebraska. Infant mortality rates shown for both years for 51 cities of 100,000 population or more in 1920 are in 19 of these cities lower in 1922 than in 1921, the highest rate (107) appearing for Trenton, and the lowest (50) for Seattle.

Correspondence.

FOREIGN LETTER.

London, July 1, 1923.

Mr. Editor:

A play entitled "The Outsider" has recently been produced at the St. James Theater, a literary production from the pen of Dorothy Brandon. I would not refer to this piece were it not for the fact that it presents a conflict between orthodoxy and heterodoxy in surgery. On the one side are all the prominent members of the College of Surgeons, pompous, expansive, or quietly professional in bearing; on the other is a "bone-setter," with a kind heart but bad manners, a passion for advertising, and, in fact, most of the external evidences of a charlatan.

But the point is that the "bone-setter" succeeds where the others fail, and, as modesty is not one of his failings, he does not allow the others to forget it. Now, the greatest of all the surgeons has an only daughter, who is a cripple, and beyond—as her father believes—all cure. However, the bone-setter does not opine in this opinion and he persuades the girl, in defiance of her father, to commit herself to his care, and undertakes in a year's time to effect a complete cure.

I would say right here that the lady is of a remarkably passionate temperament and yearns to be whole in order that she may dance with her fiancé and otherwise revel on two legs instead of one. Hence it is not altogether surprising to find that kisses form an important part of her treatment; not merely the perfunctory kisses of her half-hearted lover, but the ardent ones of the bone-setter, who carries unprofessional conduct so far as to fall in love with his patient. When the twelve months are up, the great men are all called in to witness the bone-setter's triumph. The lady stands on her feet and walks—but only to sink to the ground after a few faltering steps. Groans and objurgations from the orthodox. Despair of the bone-setter. Abrupt departure of the half-hearted sweetheart, who isn't man enough to stick to his job.

It is the father of *la grande amoureuse*, that prince of surgeons, who saves the situation. A rapid professional glance at the patient has imparted to his praeticed organ of vision, what even the bone-setter's native genius was unable to discover, that orthodox surgery can now step in and accomplish a certain cure.

But only the bone-setter's previous treatment has made this possible. Give the devil his due. Henceforward orthodoxy and heterodoxy will strike an alliance and each smilingly acknowledge the other's merit.

Meanwhile the lady has discovered that the kisses—the really good ones—that she thought, while undergoing the treatment, to have received from her sweetheart, actually proceeded from the bone-setter. That settles it, and the lady opts for the expert in osculation.

As you know, during the week beginning June 5, the oldest and one of London's most famous hospitals celebrated its eight hundredth anniversary by a festival of great historic interest. Rahere, the founder of St. Bartholomew's hospital, rises up before us in the "*Liber Fundacionis*" in his habit as he lived, and "Brother John Cok," who copied it and

translated it into racy English "in the evening of his life, Anno Domini, 1468, on whose soul may God have mercy," paints himself as well as his hero of three centuries before. He tells how he himself was born in Woodstreet, how he was apprenticed "in the first year of King Henry V," and how "on a very rainy day" he beheld the Coronation of that Sovereign and has "recorded for the refreshing of memory."

Rahere, like his patron, St. Bartholomew, was given in his youth to vain pleasures, as the "Liber" records. He haunted the houses of noble men and the palaces of princes, "where under every elbow of them he spread their cushions and by japes and flatterings, delectably anointing their ears, by this manner to draw to him their friendships." But all his "jolite and carnal suavyte" was soon to end.

It has been surmised that the loss of the "White Ship" and the drowning of the King's eldest son were the occasion of his turning to serious affairs of life. He made a pilgrimage to Rome, contracted Roman fever, vowed a vow, and on his way home had that vision of St. Bartholomew which was likewise to bear fruits enduring to the present time.

It is tempting to ascribe his design to influences far older. The Saxon King Ina had established an Anglo-Saxon "schola" by the Tiber early in the eighth century; towards its close Offa enlarged this foundation, transformed it into the "xenodochium quod Sanctus Spiritus dicitur," and endowed it with "St. Peter's Pence." Hence the most venerable hospital in the world, the Santo Spirito, whose visiting book is the most wonderful of all autograph collections, is of English origin. Over against it on the island of the Tiber the Emperor Otho III built the church in which, by a tradition much earlier than Rahere, there rests the body of St. Bartholomew. It is probable that Rahere visited it and by a curious coincidence the ruins out of which it was built were those of a temple, "Jovis et Aesculapii."

Rahere fulfilled his vow, and obeyed the vision, for he built both the hospital and church where he rests in the habit of the Augustinian Canons Regular.

The rich archives of the hospital are filled with illustrious names. They contain a Bull from Pope Alexander III—the heart of the Lombard League and hero eponymous of Alessandria—another from Clement V, and a third from that delightful patron of the early Renaissance, Nicholas V. Throughout the mediaeval epoch there were frequent controversies between the hospital and the priory, which were referred to Rome. Both were engulfed by the Crown at the Reformation, but the hospital, on the petition of the citizens, was restored "by the foundation of our Lord King Henry VIII," although Rich appears to have secured much of the monastic property.

During the anxious Tudor days Richard Grafton, the acting treasurer of the hospital, nearly lost his head by printing the proclamation which declared Lady Jane Grey to be Queen. Like Bodley, the famous Dr. Caius lived within the precincts of St. Bartholomew, while Talbot of Henry VI's reign held his town house as a tenant of the hospital. Under King Charles I, the President of the hospital was sent to the Tower for resistance to illegal taxation.

The great anatomical discovery was made by a physician of the hospital—William Harvey—who served it for over thirty years. Abernethy lectured there.

Robert de Laliefond, Warden of the Flete, confirmed to the hospital "the passage over the Fleet water for all ships which carry the goods of aforesaid hospital," a valuable privilege at a time when rents were usually paid in kind.

Bartholomew's Fair was a part of the original Royal grant to Rahere, and was finally abolished in 1854. Ben Jonson wrote a play on it, while Pepys visited it "to walk up and down," and was displeased because "the silly people" suffered Lady Castlemaine to take coach with great respect, instead of mobbing her.

The Fair was revived this year, and a "Court of Pie" to maintain order was duly proclaimed as in past days, when the "celebrated follies" of the Fair, as Evelyn calls them, made its disappearance imperative as a matter of police.

On June 11, a case was argued in the High Court of Justice, before Mr. Justice Darling and Mr. Justice Salter, when it was maintained by counsel that certain letters had been written subconsciously, to which the learned judge remarked that subconscious actions are not recognized by the law. Counsel used the word in explanation or in palliation of the accused, who, he held, was not a lunatic, but he did not know what he was writing; and to this state of mind counsel sought to apply the term sub-conscious.

But the Bench was obdurate, and while this obduracy may be regarded as a normal symptom of the inaccessibility of the legal mind to the latest discoveries of psychological science, it can likewise be looked upon from the viewpoint that the newfangled philosophy has as yet no *locus standi* before the tribunal of practical reason.

It is evident, from the remark made by Mr. Justice Darling, that the doctrine of the sub-conscious has been expounded more than once on behalf of delinquents in England, but apparently without avail.

Before it is ever pleaded successfully, it might be well to consider some of the possible results. If it can absolve a delinquent, it can obviously be used to deprive a meritorious person of his deserts. It might be resorted to as a novel form of depreciation as well. We might find ourselves saying that some person in high public esteem was merely subconsciously a good man or philanthropist; his right hand knew so little about his left hand that he never should have been looked up to. Thus might the *mens conscia recti* become degraded to the *mens subconscia*, and the inner meaning of thousands of statues and memorials be exposed.

CHARLES GREENE CUMSTON.

LONDON LETTER.

(From Our Own Correspondent.)

London, July 3, 1923.

An Advance in Bacteriotherapy. — Dr. Georges Dreyer, Professor of Pathology at Oxford University, in a lecture given recently at St. Mary's Hospital, London, demonstrated how in certain instances bacteria may be so treated by formalin and acetone that the fatty sheath in which they are enveloped is dissolved and their essential contents made accessible to agencies outside them. The presence of this fatty sheath has prevented, hitherto, anti-tuberculosis serum from reaching, so as to be able to destroy the infective material contained in the sheath. With Professor Dreyer's "de-fatted bacteria" it is hoped that new and effective results may be obtained. The Medical Research Council of the British Ministry of Health have made the following general statement on the subject: When it had been shown by experiment that small animals, highly susceptible to tuberculosis, when infected with tubercle bacilli, were improved or lost the signs of active disease after the use of Professor Dreyer's new "antigen" or vaccine, arrangements were made for trials of the treatment under suitable control at three hospitals in London. The results which have been obtained hitherto have been favorable almost without exception. Upon the results, highly promising as they now seem to be, which have been obtained in tuberculosis of the lungs or of other internal organs, no final opinion can be passed until a longer period has elapsed. In cases of tuberculous disease of the glands and

of the skin it can be said already that the results of this treatment have surpassed any known used regularly by other methods. Encouraging results have also been gained in the treatment of infections like those in puerperal fever and other septic conditions. There is good ground, therefore, for hope that a very important advance in the curative treatment of tuberculosis and of some other diseases has been made. The Medical Research Council have arranged and are arranging, in consultation with Professor Dreyer, for extensive trials of the new treatment by physicians and surgeons at various centers in different parts of the country where suitable facilities can be provided. Much has still to be learned of the best modes of application of the treatment and it is not yet ready for general use.

A Ross Institute.—A proposal has been made to establish in London a Ronald Ross Institute of Research in Tropical Diseases. It is pointed out by the signatories of a letter in which this proposal is set forth and which includes the names of men highly distinguished in various spheres of activity, that this is the twenty-fifth anniversary of Sir Ronald Ross's great discovery of the transmission of malaria to human beings through the bite of the anopheline mosquito—a discovery which has revolutionized medical science and living conditions throughout the Tropics. Attention is drawn to the fact that in the case of the Panama Canal, the application of the knowledge acquired through Ross's patient and exacting labors enabled General Gorgas so completely to stamp out malaria and yellow fever throughout an extensive area that the imported labor forces, the enormous death rate among which had frustrated all previous efforts, were able to carry out their work amid normal health conditions and to bring it to a triumphal issue. It is thought that a record such as Ross's record is, places him definitely in the ranks of the truly great investigators whose labors, like those of Pasteur, Lister, Jenner and Golgi, have conferred inestimable and lasting benefits upon the human race. It is therefore felt by those who signed the letter, among whom is Surgeon-General Hugh S. Cumming, Public Health Service, U. S., and it is also believed by others whose interests are mainly centered in the Tropics and in their civilization and development, that the occasion of the twenty-fifth anniversary of Ross's discovery should not be suffered to pass by without some fitting monument to his achievement being erected in London. The nucleus of an institute is being organized, which it is suggested shall be called the "Ronald Ross Clinic for Tropical Diseases and Hygiene," in which it is proposed that laboratory research and clinical investigation shall be combined as closely as possible in accordance with his teaching. It is assured, so the letter goes on to state, that such an institute will in no way compete with the work in a similar direction now being done at the Schools of Tropical Medicine in London and Liverpool. These bodies are said to be engaged for the most part in the education of young graduates, while the aim of the new foundation will be research alone. To initiate the Ross Institute, £50,000 is required. Both the London and Liverpool Schools of Tropical Medicine have taken exception to the statement that they are mainly concerned with education and have pointed out that their records for research of every description have been wide, practical and fruitful of good results. However, there is no doubt that there is room for an institute devoted wholly to tropical research in honor of a man who has done so much towards the extinction of perhaps the most devastating disease ever known. It may be added that in the opinion of Ross himself, set down in his memoirs, and in the opinion of many others, his work has not been adequately appreciated in his own country, nor has he been given the chance to apply his discovery in the way it might have been applied for empire building.

Dr. William J. Mayo at the Royal Society of Medicine.—An address by Dr. William J. Mayo of Rochester, Minn., on the surgery of the hepatic and common bile ducts was read before the Surgical Section of the Royal Society of Medicine on June 27 last. In the course of the address he emphasized the point that there were certain fundamental principles which greatly affect the welfare of surgical patients. These concern: 1. Mortality from the operation. 2. Benefit from the operation, and 3. Disability following the operation. In discussing the mortality of operations, he quoted a remark made by Sir Berkeley Moynihan, to the great delight of an American audience, to the effect that statistics can be made to tell everything, even the truth. Mayo went on to say that this is especially true of mortality percentages following surgical operations. The pride of the operator and his statistical skill in honestly juggling percentages make most astonishing apparent differences in statistics which are nearly identical. The fact was emphasized that mortality estimated by cases is high, estimated by the number of operations low, although the number of deaths would be the same. Stress was laid on the need for the scientific preoperative preparation of cholemic patients, and it was pointed out that of the causes of death after operation, hemorrhage and renal insufficiency, and infections of the bile ducts are the most common. Especial notice was paid to the excellent methods of blood rehabilitation in the clinic which have been developed.

Smallpox at Gloucester.—A somewhat serious outbreak of smallpox has occurred at Gloucester—serious not on account of its virulence but rather because of the mildness of its type. So mild, indeed, was its type that for some little time the cases were not diagnosed as such, the consequences being that the disease spread. In Gloucester itself it is estimated that 2000 cases have occurred, although there has been little invalidity or injury, and no mortality. In reply to a question asked in the House of Commons on June 25 last, Mr. Neville Chamberlain, the Minister of Health, said that the epidemic in Gloucester had been recognized as smallpox by a large number of local medical men, by officers of the Health Department, and by an expert of the Metropolitan Asylums Board who was called in. Moreover, a number of cases of smallpox were recognized in other districts and traced to Gloucester. This epidemic appears to be, and no doubt is, largely, if not wholly, due to the widespread neglect of vaccination in Great Britain. Conscientious objectors, or so-called conscientious objectors, to vaccination can claim exemption, and thus through ignorance—as the majority of such objectors neither know nor care anything about the history of vaccination—can menace the health of the entire community. This epidemic, which in one area or another and at one time or another has now been in existence since last autumn, need never have occurred had the population availed itself of vaccination. As was pointed out by the medical correspondent of the London *Times* a short time ago, few more lamentable demonstrations of the evil effects of a stupid and mischievous propaganda have ever been afforded. It appears, too, to be the height of irony that in the country in which vaccination was introduced, a method which has saved countless numbers of people in all parts of the world from death and injury, should be almost alone among civilized lands to allow this wonderful preventive measure to fall into disrepute.

Law Regarding Death Certificates.—Dr. Salter has introduced a bill into the House of Commons to strengthen the law regarding death certificates. The bill provides that no person should be buried with-

out the proper certificate of a medical man who had examined the body and supplied the proper tests. Dr. Denis Vinrace, commenting on the question, said he had no doubt many murders took place every year owing to this deficiency of a medical certificate. As the law now stood, it was easy for people in many districts to obtain medical certificates of the death of persons who were alive and had been removed elsewhere. Where one person was buried alive, hundreds were buried by foul play, owing to the insufficiency of medical certification.

National Baby Week.—The British Baby Week began on July 2. The work is being observed all over the country. Lord Astor, chairman of the National Baby Week Council, has offered for competition a silver challenge shield, to be awarded to the local Baby Week committee which, in the opinion of the judges, holds the most effective local Baby Week campaign during the year. Baby Week conferences are to be held in London. Dr. Eric Pritchard is one of the leading spirits in the movement to save the lives of infants and to improve the health of infants and children. It may be said that it is in the direction of inquiry into local conditions that National Baby Weeks do much by stimulating inquiry and rivalry, exciting interest among the community at large as to how weakly and defective children can be brought into a state of sound health, or, at any rate, improved in health. Also it may arouse and accentuate concern in the housing question, environment having so great an influence on the physical and mental condition of the young.

A book has just been published by William Heinemann, Ltd., London, compiled by Carel A. Hoeffbeke of London. The book deals with the ambulatory treatment of fractures and diseased joints. Even before the war long-continued immobilization of such joints was falling into disrepute, and the experiences of the war, and especially the results obtained by Willems, the well-known Belgian surgeon, by spontaneous mobilization of suppurating wounds, showed conclusively that in many, if not in the majority of cases of injuries of joints, mobilization was the rational mode of treatment. Mr. Hoeffbeke has designed and has had constructed appliances by which movements and extension of tuberculous, rheumatoidal and certain forms of injuries to joints may be cured or relieved. The book contains a description with illustrations of the appliances and the methods of using the same. It also contains articles by many prominent British surgeons who have employed these appliances and had good results from them. Among these are Sir Arbuthnot Lane, Sir Waston Cheyne and Mr. Frank Romer and Dr. Binnie of Kansas City.

ACKNOWLEDGMENT OF BOOKS FOR REVIEW.

Practical Bacteriology Blood Work Parasitology. E. R. Stitt. Philadelphia: P. Blakiston's Son & Co. 766 pp. Price $5.

Digestive Disturbances in Infants and Children. Charles Gilmore Kerley and Leon Theodore LeWald. New York: Paul B. Hoeber. Price $12.

First Aid X-Ray Atlas of the Arteries. H. C. Orrin. New York: Paul B. Hoeber. 46 pp. Price $1.

First Aid X-Ray Atlas of Fractures and Dislocations. H. C. Orrin. New York: Paul B. Hoeber. 76 pp. Price $1.

Recovery Record for Use in Tuberculosis. Gerald B. Webb and Charles T. Ryder. New York: Paul B. Hoeber. 79 pp. (also Chart Sheets). Price $2.

Operative Treatment of Glaucoma. H. Herbert. New York: William Wood & Co. 152 pp. Price $3.

Teeth, Diet and Health. Kurt H. Thoma. New York: Century Company. 215 pp. Price $2.

Nosography. Knud Faber. New York: Paul B. Hoeber. 222 pp. Price $3.75.

International Clinics. Volume 2, Series 33. Various Authors. Philadelphia and London: J. B. Lippincott Company. 304 pp.

NOTICES.

NEW ENGLAND SURGICAL SOCIETY.

PRELIMINARY ANNOUNCEMENT.

The next meeting of the New England Surgical Society will be held at Boston, Thursday and Friday, October 18 and 19, 1923.

THURSDAY, OCTOBER 18.

8.00 A. M. Surgical Clinic at Peter Bent Brigham Hospital.
10.30 A. M. to 1.00 P. M. Reading of papers, Amphitheater, Harvard Medical School.
2.00 P. M. Scientific Program continued at Harvard Medical School.
7.00 P. M. Annual Dinner.

FRIDAY, OCTOBER 19.

8.30 A. M. to 10.30 A. M. Clinic at Massachusetts General Hospital.
11.00 A. M. to 1.00 P. M. Clinic at Boston City Hospital.
2.00 P. M. Presentation of papers at the Boston Medical Library.

CASES REPORTED TO THE MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH.

WEEK ENDING JULY 14, 1923.

Disease.	*No. of Cases.*	*Disease.*	*No. of Cases.*
Actinomycosis	2	Pellagra	2
Anterior poliomyelitis	3	Pneumonia, lobar	14
Chicken-pox	69	Scarlet fever	108
Diphtheria	139	Smallpox	2
Dog-bite requiring anti-rabic treatment	15	Suppurative conjunctivitis	12
Epidemic cerebrospinal meningitis	3	Syphilis	36
German measles	3	Tetanus	2
Gonorrhea	122	Trachoma	1
Influenza	1	Tuberculosis, pulmonary	130
Measles	273	Tuberculosis, other forms	16
Mumps	82	Typhoid fever	10
Ophthalmia neonatorum	24	Whooping-cough	138

SOCIETY MEETINGS.

DISTRICT SOCIETIES.

Essex North—Combined Meeting with Middlesex North, Middlesex East and Essex South in October. Semi-annual Meeting at Haverhill, January 2, 1924. Annual Meeting at Lawrence, May 7, 1924.

September, 1923:—Meeting of Franklin and Hampshire District Medical Societies at South Deerfield.

STATE, INTERSTATE AND NATIONAL SOCIETIES.

September 11-12, 1923:—Celebration of the twenty-fifth anniversary of the Rutland State Sanatorium; sessions first day at Worcester; second day at Rutland State Sanatorium.

October, 1923:—Boston Health Show will be held in Boston, October 6-13, inclusive.

October, 1923:—Meeting of the American Health Association will be held in Boston, October 8-13, inclusive.

October 18-19, 1923:—Annual Meeting of New England Surgical Society in Boston.

For list of Officers of the Massachusetts Medical Society, see page vii of the Advertising Section.